NOTEBOOK USER'S MANUAL

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Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the service representative or an experienced radio/TV technician for help.

Warning

Use only shielded cables to connect I/O devices to this equipment. You are cautioned that changes or modifications not expressly approved by the manufacturer for compliance with the above standards could void your authority to operate the equipment.

IMPORTANT SAFETY INSTRUCTIONS

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.

CAUTION

Always disconnect all telephone lines from the wall outlet before servicing or disassembling this equipment.

TO REDUCE THE RISK OF FIRE, USE ONLY No. 26 AWG OR LARGER, TELECOMMUNICATION LINE CORD

IMPORTANTES MESURES DE SÉCURITÉ

Certaines mesures de sécurité doivent être prises pendant l'utilisation de matérial téléphonique afin de réduire les risques d'incendie, de choc électrique et de blessures. En voici quelquesunes:

1. Ne pas utiliser l'appareil près de l'eau,, p.ex., près d'une baignoire, d'un lavabo, d'un évier de cuisine, d'un bac à laver, dans un sous-sol humide ou près d'une piscine.
2. Éviter d'utiliser le téléphone (sauf s'il s'agit d'un appareil sans fil) pendant un orage électrique. Ceci peut présenter un risque de choc électrique causé par la foudre.
3. Ne pas utiliser l'appareil téléphonique pour signaler une fuite de gaz s'il est situé près de la fuite.
4. Utiliser seulement le cordon d'alimentation et le type de piles indiqués dans ce manuel. Ne pas jeter les piles dans le feu: elles peuvent exploser. Se conformer aux règlements pertinents quant à l'émination des piles.

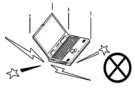
ATTENTION

Débranchez toujours toutes les lignes téléphoniques des prises murales avant de réparer ou de démonter cet équipement.

UTILISEZ LE CORDON DE TÉLÉPHONE 26AWG APPROPRIÉ

Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To ensure that does not happen, follow these suggestions:



1. **Don't drop it.** Make sure it's on a stable surface. If the computer falls, the case and other components could be damaged. Do not expose it to any shock or vibration.

2. **Don't overheat it.** Keep the computer and power supply away from any kind of heating element. Keep the computer out of direct sunlight. Don't store or use the computer in a humid environment. Do not place the computer on any surface which will block the vents.

3. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.

4. **Keep it dry.** This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged. Do not leave it in a place where foreign matter or moisture may affect the system.

5. **Follow the proper working procedures for computer**. Shut-down the computer properly, and close all programs (don't forget to save your work). Do not turn off any peripheral devices when the computer is on. Do not disassemble the computer by yourself. Remember to periodically save your data as data may be lost if the battery is depleted. Perform routine maintenance on your computer.

6. **Take care when using peripheral devices**. Use only approved brands of peripheral devices. Unplug the power cord before attaching any peripheral device.

7. **Do not place anything heavy on the computer**.

Power Safety

The computer has specific power requirements:

- Only use a power adapter approved for use with this computer.
- Your AC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies (i.e. AC adapter or car adapter).
- Do not plug in the power cord if you are wet.
- Do not use the power cord if it is broken.
- Do not place heavy objects on the power cord.

Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

Caution

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Battery Disposal

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Cleaning

Do not apply cleaner directly to the computer, use a soft clean cloth. Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.

Servicing

Do not attempt to service the computer yourself. Doing so may violate your warranty and expose you and the computer to electric shock. Refer all servicing to authorized service personnel. Unplug the computer from the power supply. Then refer servicing to qualified service personnel under any of the following conditions:

- When the power cord or AC/DC adapter is damaged or frayed.
- If the computer has been exposed to rain or other liquids.
- If the computer does not work normally when you follow the operating instructions.
- If the computer has been dropped or damaged (do not touch the poisonous liquid if the LCD panel breaks).
- If there is an unusual odor, heat or smoke coming from your computer.

Travel Considerations

Packing

As you get ready for your trip, run through this list to make sure the system is ready to go:

1. Check that the battery pack and any spares are fully charged.
2. Power off the computer and peripherals.
3. Close the display panel and make sure it's latched.
4. Disconnect the AC adapter and cables. Stow them in the carrying bag.
5. The AC adapter uses voltages from 100 to 240 volts so you won't need a second voltage adapter. However, check with your travel agent to see if you need any socket adapters.
6. Put the notebook in its carrying bag and secure it with the bag's straps.
7. If you're taking any peripherals (e.g. a printer, mouse or digital camera), pack them and those devices' adapters and/or cables.
8. Anticipate customs - Some jurisdictions may have import restrictions or require proof of ownership for both hardware and software. Make sure your "papers" are handy (it may be useful to have the computer in standby mode before going through customs).

On the Road

In addition to the general safety and maintenance suggestions in this preface, and Chapter 7: Troubleshooting. Keep these points in mind:

Hand-carry the notebook.
For security, don't let it out of your sight. In some areas, computer theft is very common.

Don't check it with "normal" luggage. Baggage handlers may not be sufficiently careful. Avoid knocking the computer against hard objects.

Beware of Electromagnetic fields.
Metal detectors & X-ray machines
These devices can damage the computer, hard disk and other media. They may also destroy any stored data - Pass your computer and disks around the devices. Ask security officials to hand-inspect them. (you may be asked to turn it on.)
Note: Some airports also scan luggage with these devices.

Fly safely.
Most airlines have regulations about the use of computers and other electronic devices in flight. These restrictions are for your safety, follow them. If you stow the notebook in an overhead compartment, make sure it's secure. Contents may shift and/or fall out when the compartment is opened.

Get power where you can.
If an electrical outlet is available, use the AC adapter and keep your battery(ies) charged.

Keep it dry.
If you move quickly from a cold to a warm location, water vapor can condense inside the computer. Wait a few minutes before turning it on so that any moisture can evaporate.

Developing Good Work Habits

Developing good work habits is important if you need to work in front of the computer for long periods of time. Improper work habits can result in discomfort or serious injury from repetitive strain to your hands, wrists or other joints. The following are some tips to reduce the strain:

- Adjust the height of the chair and/or desk so that the keyboard is at or slightly below the level of your elbow. Keep your forearms, wrists, and hands in a relaxed position.
- Your knees should be slightly higher than your hips. Place your feet flat on the floor or on a footrest if necessary.
- Use a chair with a back and adjust it to support your lower back comfortably.
- Sit straight so that your knees, hips and elbows form approximately 90-degree angles when you are working.
- Take periodic breaks if you are using the computer for long periods of time.

Remember to:

- Alter your posture frequently.
- Stretch and exercise your body several times a day.
- Take periodic breaks when you work at the computer for long periods of time. Frequent and short breaks are better than fewer and longer breaks.

Lighting

Proper lighting and comfortable display viewing angle can reduce eye strain and muscle fatigue in your neck and shoulders.

- Position the display to avoid glare or reflections from overhead lighting or outside sources of light.
- Keep the display screen clean and set the brightness and contrast to levels that allow you to see the screen clearly.
- Position the display directly in front of you at a comfortable viewing distance.
- Adjust the display viewing angle to find the best position.

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Chapter 1: Introduction

Overview

What this chapter covers:

- The Manual — how to use it
- Quick Start Guide — the minimum you need to know
- System Map — navigating around your computer

Notes

Check the light colored boxes with the mark above to find detailed information about the computer's features.

The Manual

This manual refers to the hardware and essential software required to run your notebook computer. Depending on how your system is configured, some or all of the features described may already be set up.

Advanced Users

If you are an advanced user you may skip over most of this manual. However you may find it useful to refer to the *"Drivers & Utilities" on page 4 - 1*, *"BIOS Utilities" on page 5 - 1* and *"Upgrading The Computer" on page 6 - 1*. You may also find the notes marked with a of interest to you.

Beginners and Not-So-Advanced Users

If you are new to computers, or do not have an advanced knowledge of them, then you should try to look through all the documentation. Do not worry if you do not understand everything the first time. Keep this manual nearby and refer to it to learn as you go. You may find it useful to refer to the beginner's notes marked with a as indicated in the margin.

Warning Boxes

No matter what your level please pay careful attention to the warning and safety information indicated by the symbol. Also please note the safety and handling instructions as indicated in the *Preface*.

Not Included

Operating Systems (e.g. *Windows 2000 Professional, Windows XP etc.*) have their own manuals as do applications (e.g. word processing, spreadsheet and database programs). If you have questions about the operating systems or programs then please consult the appropriate manuals.

System Software

Your computer may already come with system software pre-installed. Where this is not the case, or where you are re-configuring your computer for a different system, you will find this manual refers to the following operating systems:

- *Microsoft Windows 98SE*
- *Microsoft Windows ME*
- *Microsoft Windows 2000*
- *Microsoft Windows XP*

Note: All operating system pictures in this manual are from the *Microsoft Windows XP* OS.

Quick Start Guide

This guide assumes that you are already familiar with computers and can tell at a glance what and where all the key components are. If you are not that comfortable with this type of device, then please refer to the following pages, which give an overview of the system.

It is still best to review these steps, *before* taking any action. If there is anything you are not sure about, then please refer to the appropriate chapter before continuing.

Unless you need to install an operating system, your computer should be ready to work right out of the box. Before you begin please follow the safety instructions in the *Preface*.

1. Remove all packing materials, CDs/DVDs, floppy disks, and any PC Cards.
2. Securely attach any peripherals you want to use with the notebook (e.g. keyboard and mouse) to their ports.
3. Attach the AC adapter to the DC-in jack at the rear of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC adapter.
4. Raise the lid/LCD to a comfortable viewing angle.
5. Press the power button to turn “on”.

Peripheral Devices

Please note that peripherals (printers, digital cameras, etc.) which attach to your computer by either **USB** or **IEEE1394** ports may be connected *after* Windows is up and running. All other peripherals must be connected *before* you turn on the system.

System Map

Your notebook PC has a lot of built-in features. Most of these are enabled by your operating system. Further explanations of the various subsystems are covered in the chapter or pages indicated.

Getting to Know Your Computer

The following graphics will help you to become familiar with the basic functions, and to learn the location of the various ports and components of your computer.

Model Types

This notebook series includes two model types according to their specifications. In addition there are three external designs within each of the model types (a total of six different combinations). You will be able to identify your model type from the right side of the machine:

Model A

Model B

Figure 1 - 1
Model Differences

Model A includes an IEEE1394 port ❶, PC Card Slot ❷ and Infrared transceiver ❸; **Model B** does not. The external design photographs used throughout this manual are of **Design I** (*Figure 1 - 2 on page 1-8*).

Model Designs

Figure 1 - 2
Design Differences

Design I

Design II

Design III

Top View with LCD Panel Closed

Figure 1 - 3
Top View with LCD Panel Closed

1. LCD Latch
2. LED Power & Auto Mail Indicators

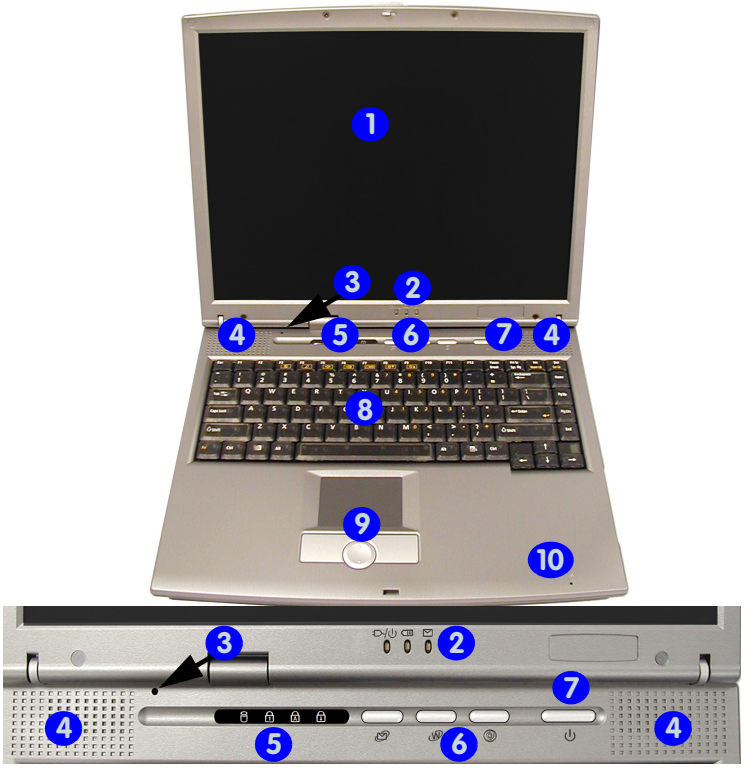
To open the LCD display:

1. Place the computer on a stable surface.
2. Move the cover latch 1 to the right, and hold it, to release the top cover.
3. Lift the top cover to reveal the LCD panel and keyboard.
4. Adjust the LCD panel to a comfortable viewing angle.
5. The LED Power & Auto Mail Indicators 2 show the power source and power status of the computer, and give notification of e-mail received.

Top View with LCD Panel Open

Figure 1 - 4
Top View with LCD Panel Open

1. LCD
2. LED Power & Auto Mail Indicators
3. Close Cover Switch
4. Speakers
5. LED Status Indicators
6. Hot-Key Buttons
7. Power Button
8. Keyboard
9. TouchPad and Buttons
10. Microphone



LCD Panel

The notebook PC comes with a 14.1" XGA 1024x768 TFT **OR** 15.0" XGA 1024x768 TFT **OR** 15.0" SXGA+ 1400x1050 TFT LCD (Liquid Crystal Display) screen depending upon the configuration purchased.

LED Power & Auto Mail Indicators

These indicators display the current power source and power source status of the computer. The third indicator may be configured to give a visual confirmation when e-mail is received in the default e-mail program (see *"Auto Mail Checker" on page 2 - 9*).

Close Cover Switch

This switch acts as a sensor to tell when the LCD Panel is closed. When this LCD cover sensor is activated the default setting of your operating system's power scheme sends the computer into a power saving state (see *"Power Schemes" on page 3 - 19*).

Stereo Speakers

Two built-in speakers provide rich, stereo sound.

LED Status Indicators

These display the system's operational status. Refer to *"LED Status Indicators" on page 2 - 7* for more information on what the lights mean.

Hot-Key Buttons

The three Hot-Keys allow you instant access to your default internet browser, default e-mail program, and an application of your choice. To learn how to set the buttons see *"Hot-Keys" on page 2 - 19*.

Power Button

Press this button to turn your computer on or off (see *"Turning on the Computer" on page 2 - 5*). This button may also be used as a suspend/resume key, once configured as such in the power management control panel of your operating system (see *"Configuring the Power Button" on page 3 - 23*).

Forced Off

If the system "hangs", and the **Ctrl** + **Alt** + **Del** key combination doesn't work, press the power button for **4 seconds** to force the system to turn itself off.

Shutdown

Please note that you should always shut your computer down by choosing the **Shut Down/Turn Off Computer** command from the **Start** menu in ***Windows.*** This will help prevent hard disk or system problems.

Keyboard

The computer has a "Win Key" keyboard with an embedded numeric keypad. It has the same features as a full-sized desktop keyboard and can easily be replaced with a different language keyboard should you desire.

TouchPad & Buttons

The pointing device features a sensitive glide pad for precise movements. It functions the same way as a two-button mouse. The right TouchPad button is the same as the right mouse button; the left TouchPad button is the same as the left mouse button. The central buttons may be used to scroll up and down, or they may be configured to perform a variety of function (see *"Configuring the TouchPad and Buttons" on page 2 - 26*).

Microphone

Record on your notebook computer with the built-in microphone.

Left Side View

Figure 1 - 5
Left Side View

1. Security Lock
2. Vent

Security Lock

To prevent possible theft, a Kensington-type lock can be attached to this slot. Locks can be purchased at any computer store.

Vent

This enables airflow to prevent the notebook from overheating.

Overheating

To prevent your computer from overheating make sure nothing blocks the vent while the computer is in use.

Figure 1 - 6
Right Side View

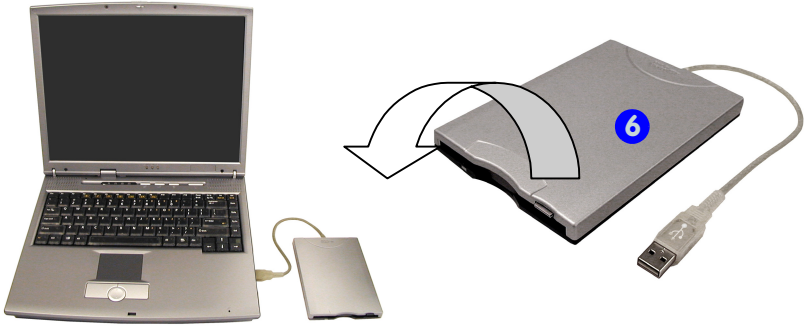
1. Microphone-In Jack
2. Headphone-Out Jack
3. S/PDIF Out Port
4. Mini IEEE 1394 Port
5. Three USB Ports
6. USB FDD (optional)
7. PC Card Slot
8. PC Card Eject Button
9. CD Device
10. Infrared Transceiver

Note: Model B does not have IEEE1394, PC Card or Infrared support.

Right Side View

Model A

Model B



Microphone-In Jack

Record on your notebook computer with an external microphone.

Headphone-Out Jack

Headphones or speakers may be connected through this jack.
Note: Set your system's volume to a reduced level before connecting to this jack.

S/PDIF Out Port

You can use this port for S/PDIF (Sony/Philips Digital Interface Format) output, which allows you to connect your DVD-capable PC to a Dolby AC-3 compatible receiver for "5.1" or 'dts' surround sound.

Mini - IEEE 1394 Port (Model A only)

This allows high speed connection to various peripheral devices, e.g. external disk drives and digital cameras (**see note below**).

IEEE 1394

The IEEE 1394 port only supports **SELF POWERED** IEEE 1394 devices.

Three USB Ports

These ports are hardware interfaces for low-speed peripherals such as a keyboard, mouse, joystick, scanner, printer or telephony devices. Devices may be plugged into the computer, and unplugged from the computer, without the need to turn the system off.

Win98SE Installation Warning

Win98SE installation usually requires you to start your system from a floppy disk, then browse to the CD to run setup.exe program. After the system has started up from the floppy disk, please **disconnect the USB floppy drive** before browsing to the CD drive to install the Win98 software. This will avoid a "system hang".

Optional 3.5" USB FDD (Floppy Disk Drive)

Your computer may have a 3.5" USB, 1.44 MB floppy disk option (see 6 in *Figure 1 - 6 on page 1-16*) depending on the configuration purchased. For more information please refer to *"The USB Floppy Disk Drive (FDD)" on page 2 - 13*. Make sure you install the drivers for the USB floppy if you are using *Windows 98SE* (see *"Install Order" on page 4 - 4*).

Media Warning

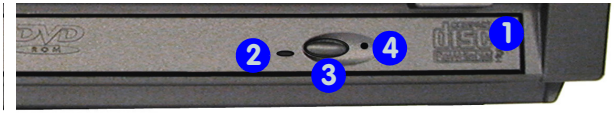
Don't try to remove a floppy disk while the system is accessing it. This may cause the system to "crash".

PC Card Slot (Model A only)

This is a type II 3.3V/5V/12V PC card slot (also previously referred to as PCMCIA) supporting CardBus. Refer to *"The PC Card Slot (Model A only)" on page 2 - 18* for more information on the PC Card slot.

CD Device

A 5.25" CD-ROM drive, or DVD-ROM drive, or CD-RW, or Combination CD-RW and DVD-ROM Drive (12.7mm height) is standard depending on the model you purchased. For more information on using the drive please refer to *"The CD Device" on page 2 - 14*.



1. CD-ROM or DVD label to indicate which type
2. Busy Indicator
3. Open button
4. Emergency eject hole

CD Emergency Eject

If you need to manually eject a CD/DVD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole.

Do not use a sharpened pencil or similar object that may break and become lodged in the hole.

Figure 1 - 7
CD Device

Infrared Communication

The Infrared transceiver operates on a “Line of Sight”.

Make sure nothing is blocking the “Line of Sight” between your system’s transceiver and the destination’s transceiver.

Infrared Transceiver (Model A only)

The infrared transceiver enables communication between the computer and another similarly equipped device, and is 115.2K bps SIR, 4M bps FIR, IrDA 1.1 compliant. For further information, please refer to the manual of the device you wish to connect.

Rear View

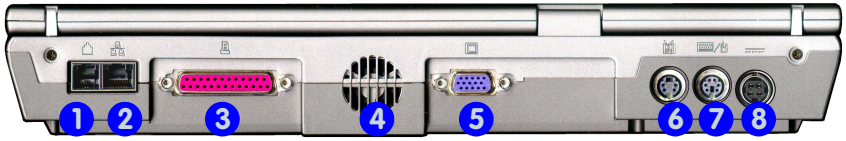


Figure 1 - 8
Rear View

1. RJ-11 Phone Jack
2. RJ-45 LAN Jack
3. Parallel Port
4. Vent
5. External Monitor (CRT) Port
6. S-Video Port
7. PS/2 Type Port
8. DC-In Jack

Overheating

To prevent your computer from overheating make sure nothing blocks the vent while the computer is in use.

RJ-11 Phone Jack

This port connects to the built-in modem. You may plug the telephone line directly into this RJ-11 telephone connection.
Note: Broadband (e.g. ADSL) modems usually connect to the LAN port.

RJ-45 LAN Jack

This port supports LAN (Network) functions.
Note: Broadband (e.g. ADSL) modems usually connect to the LAN port.

Printer/Parallel Port

This port supports ECP (Extended Capabilities Port) and EPP (Enhanced Parallel Port) 1.7/1.9 modes.

External Monitor (CRT) Port

Connect an external CRT monitor to this port to allow dual video or simultaneous display on the LCD and external CRT monitor (see *"Display Devices" on page 3 - 9*).

S-Video Port

Connect your television to your computer and view DVDs, VCDs or anything else your computer can display. You will need an S-Video cable to make the connection. Enable this port from the video driver controls (see *"TV Display" on page 3 - 16*).

PS/2 Type Port

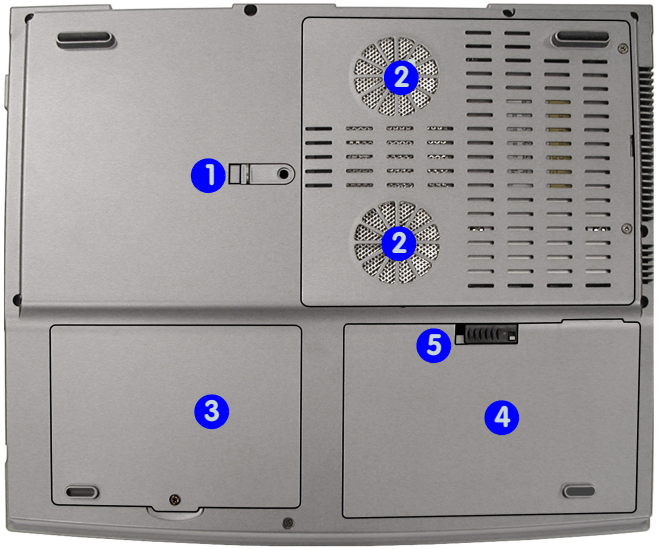
Connect an external PS/2 type mouse or keyboard to this port. You can use a “Y” splitter if you want to attach both.

DC-In Jack

Plug the supplied AC adapter into this jack to power your notebook.

Bottom View

Figure 1 - 9
Bottom View



1. CD Device Release Latch
2. Vents/Fan Outlets
3. HDD Bay
4. Battery
5. Battery Release Latch

Overheating

To prevent your computer from overheating make sure nothing blocks the vent while the computer is in use.

Chapter 2: Using The Computer

Overview

Your notebook computer can be used almost anywhere, in the home, office, or on the road. To learn more about your computer, please read this chapter.

This chapter includes:

- The Power Sources
- Turning on the Computer
- The LED Indicators
- The Hard Disk Drive
- The Floppy Disk Drive
- The CD Device
- The PC Card Slot
- The Hot-Keys
- The Function Keys
- The Numeric Keypad
- The TouchPad and Buttons
- Adding a Printer

Power Button as Standby or Hibernate Button

If you are using a fully ACPI-compliant OS, such as *Windows 2000*, *Windows XP* or *Windows Millennium Edition* the power button can be designated as **Standby** or **Hibernate** within the OS's "Power Options" subsystem (see your OS's documentation, or ***"Power Management Features" on page 3 - 17*** for details).

Note: **Hibernate** mode is not available in **Windows 98SE**.

The Power Sources

Either an AC adapter or a battery pack can power the computer.

AC Adapter

Only use the AC adapter that comes with your computer. The wrong type of AC adapter will damage the computer and its components.

1. Attach the AC adapter to the DC-in jack at the rear of the computer.
2. Plug the AC power cord into an outlet, and then connect the AC power cord to the AC adapter.
3. Raise the lid/LCD to a comfortable viewing angle.
4. Press the power button to turn "on".

Battery

The battery allows you to use your notebook computer while you are on the road, or an electrical outlet is unavailable. Battery life varies depending on the applications and the configuration you're using. To increase battery life, let the battery discharge completely before re-charging.

We recommend leaving the battery inside the notebook at all times. For more information on the battery, please refer to *"Battery Information" on page 3 - 24*.

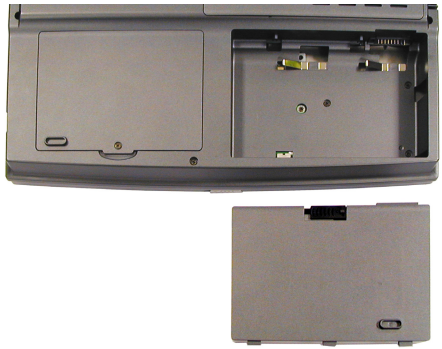


Figure 2 - 1
Battery Removed

Battery Critically Low

Sleep Button

When the battery reaches a critically low power state, the system will either go into Hibernate or Standby mode dependant upon the setting of the Sleep Button (*"Suspend/Resume Keys" on page 3 - 23*).

System Resume

To get the system to resume from Standby mode (when powered by the battery) when the battery has reached a critically low power state, firstly plug-in the AC adapter.

Recharging Battery with the AC Adapter

The battery pack automatically recharges when the AC adapter is attached and plugged into an electrical outlet. If the computer is powered on, and in use, it will take several hours to fully recharge the battery. When the computer is turned off but plugged into an electrical outlet, battery charge time is reduced (refer to *"LED Power & Communication Indicators" on page 2 - 8* for information on the battery charge status).

Proper handling of the Battery Pack

- DO NOT disassemble the battery pack under any circumstances.
- DO NOT expose the battery to fire or high temperatures, it may explode.
- DO NOT connect the metal terminals (+, -) to each other (for more information on how to maintain the battery pack, refer to *"Battery Information" on page 3 - 24*).

Turning on the Computer

Now you are ready to begin using your notebook computer. To turn it on simply press the power button on the top right of the front panel. When the computer is turned on, the Power Button can also be used as a Standby/Hibernate/Shutdown hot-key button (**Hibernate mode is not available in Win98SE**) if pressed for less than **4 seconds** (pressing and holding the Power Button for longer than this will shut the computer down) and is appropriately configured in the *OS* Control Panel (**Power Options/Power Management**).

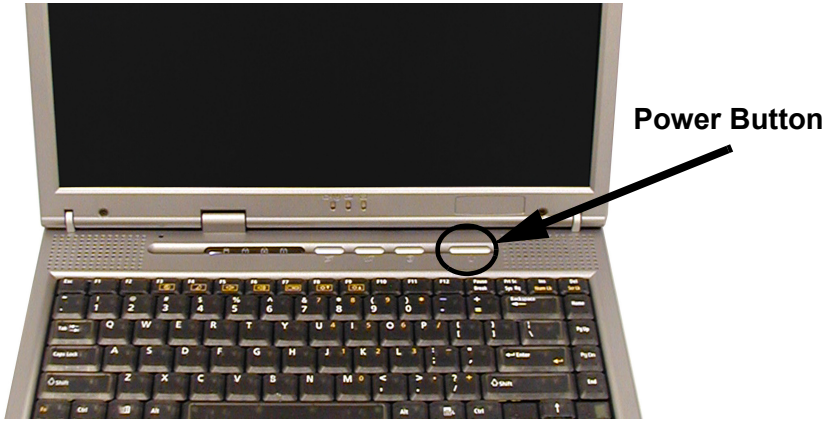


Figure 2 - 2
Power Button

Forced Off

If the **Ctrl + Alt + Del** key combination doesn't work when the system "hangs", press the power button for **4 seconds**, or longer, to force the system to turn itself off.

Shutdown

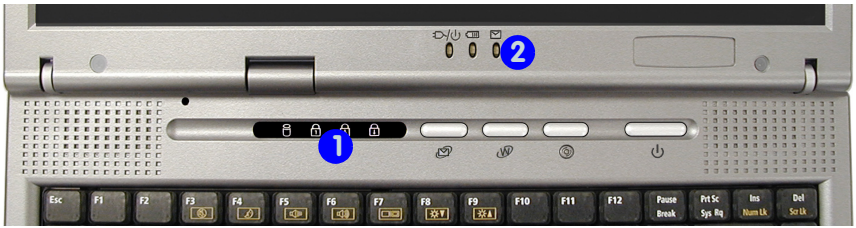
Always shut your computer down by the **Shut Down/Turn Off Computer** command from the **Start** menu in ***Windows***.

LED Indicators

There are two sets of LED indicators (**LED Status Indicators** and **LED Power & Automail Indicators**) on your computer. These display helpful information about the current status of the computer.

Figure 2 - 3
LED Indicators

1. LED Status Indicators
2. LED Power & Auto Mail Indicators



LED Status Indicators

Icon	Color	Description
	Green	The Hard Drive is being accessed
	Green	Number Lock is activated
	Green	Caps Lock is activated
	Green	Scroll Lock is activated

Num Lock

For more information on the number lock feature see *"The Numeric Keypad" on page 2 - 23*.

Table 2 - 1
LED Status Indicators

LED Power & Communication Indicators

Table 2 - 2
LED Power & Auto Mail Indicators

Icon	Color	Description
	Orange	AC Power is plugged in
	Green	The computer is turned on
	Blinking Green	The system has entered the configured standby mode
	Orange	The battery is being charged
	Green	The battery is fully charged
	Blinking Orange	The battery has reached critically low power status
	Blinking Green	New mail has arrived
	Fast Blinking Green	New mail has arrived from users defined in the Special Group in Auto Mail Checker

Auto Mail Checker

After you have installed the driver for the Auto Mail program (see *"Install Order" on page 4 - 4*) you may then configure it to give notification when new mail is received. You must be online to receive this notification (note that this program only supports the **POP3** protocol), and your default mail program does not need to be open.

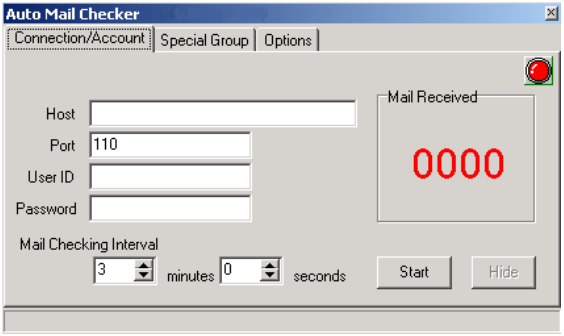
The Auto Mail Checker appears as an icon in the **taskbar**. Clicking on the icon will bring up the following options menu.

Select **Open** to bring up the control panel for the program.

Note

Check with your Internet Service Provider, network administrator or Mail Service provider for details on what to put on these pages.

You may then configure the options for your mailserver, name, password, program and method(s) of notification.



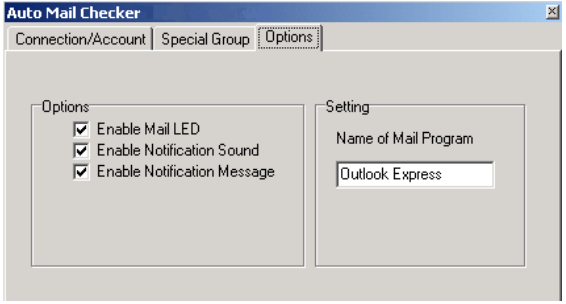


Figure 2 - 4
AutoMail Checker Account Setup and Options

Special Group

You may also define the users you want to appear in this group (see *Figure 2 - 5*). If you choose to enable the **Mail LED** then the ✉ icon will blink when you receive new mail in your default mail program.

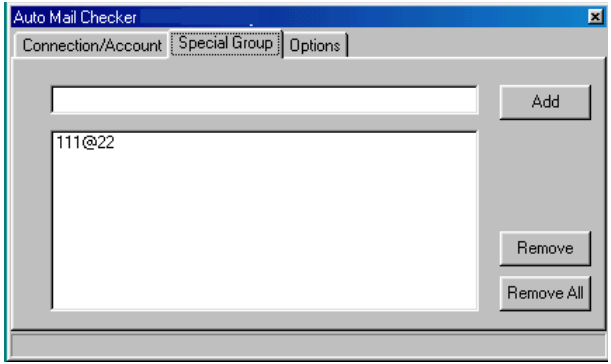


Figure 2 - 5
Special Group Setup

You may add the e-mail addresses of those you wish to assign to your special group here. The LED will then blink fast when mail is received from members of this group if LED notification is enabled in the control panel (see *Figure 2 - 4*).

Power Safety

Before attempting to access any of the internal components of your notebook please insure that the machine is not connected to the AC power, and that the machine is turned off. Also ensure that all peripheral cables, including phone lines, are disconnected from the computer.

The Hard Disk Drive (HDD)

The hard disk drive is used to store your data in the notebook computer. It is mounted in a removable case and can be taken out to accommodate other 2.5" (9.5mm) height IDE hard disk drives. The system supports PIO mode 4 /ATA-33/66/100.

The hard disk is accessible from the bottom of your computer as seen below, 1 (remove screw 2). Further details on removing and inserting the hard disk are available in *"Upgrading the Hard Disk Drive" on page 6 - 5*.

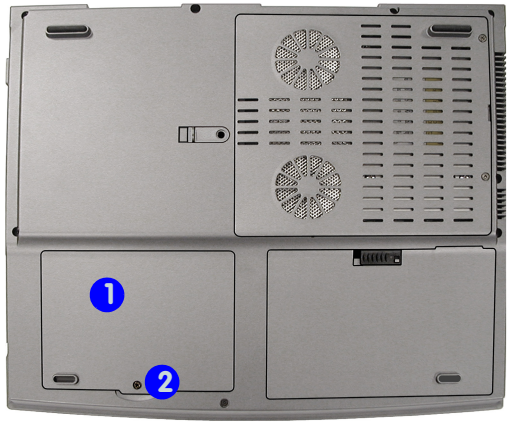


Figure 2 - 6
Hard Disk Location

The USB Floppy Disk Drive (FDD)

You may have an external 1.44 MB, 3.5” USB floppy disk drive module depending on the configuration purchased. By default it is drive "**A:**" and can be used as a boot device if properly set in the **BIOS**. For more information refer to ***“Boot Menu” on page 5 - 16***. If you are using *Windows 98SE* make sure you install the driver for the USB FDD (see ***“USB FDD (Win98SE)” on page 4 - 8***).

Note: If your configuration does not include the FDD you may purchase an external USB FDD.

Inserting/Removing Floppy Disks

When using the floppy drive, always insert your floppy diskette with the label-side facing up. To remove the inserted diskette, press the eject button on the floppy drive.

Media Warning

Don’t try to remove a floppy disk while the system is accessing it. This may cause the computer to “crash” and damage your data.

Win98SE Installation Warning

Win98SE installation usually requires you to start your system from a floppy disk, then browse to the CD to run setup.exe program. After the system has started up from the floppy disk, please **disconnect the USB floppy drive** before browsing to the CD drive to install the Win98 software. This will avoid a “system hang”.

Sound Volume Adjustment

You may set the volume adjustment from the volume control within *Windows*. Click the **Speaker** icon on the **taskbar** to check the settings.

The CD Device

Depending on the configuration purchased, your system may have one or more CD devices. If present in a standard configuration, the device will appear as drive "**D:**".

Loading Discs

To insert a CD/DVD disc, press the Open Button and carefully place a CD/DVD disc onto the disc tray with label-side facing up (use just enough force for the disc to click onto the tray's spindle). Gently push the CD/DVD tray in until its lock "clicks". The Busy Indicator will light up while data is being accessed or while an audio CD/DVD is playing. If power is unexpectedly interrupted, insert an object such as a straightened paper clip into the emergency eject hole to open the tray.

Handling CDs or DVDs

Proper handling of your CDs will prevent them from being damaged. Please follow the advice below to make sure that the data stored on your CD-ROM / DVD-ROM discs can be accessed.

Remember to:

- Hold the CD or DVD by the edges; do not touch the surface of the disc.
- Use a clean, soft, dry cloth to remove dust or fingerprints.
- Do not write on the surface with a pen.
- Do not attach paper or other materials to the surface of the disc.
- Do not store or place the CD or DVD in high-temperature areas.
- Do not use benzene, thinner, or other cleaners to clean the CD or DVD.
- Do not bend the CD or DVD.
- Do not drop or subject the CD or DVD to shock.

Media Warning

When manually ejecting a CD/DVD disc, DO NOT use a sharpened pencil or similar object which, may break and become lodged in the hole.

CD Emergency Eject

If you need to manually eject a CD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole. However please do not use a sharpened pencil or similar object that may break and become lodged in the hole.

Multiple Display Modes & DVD Playback

In **Mirror** mode DVD movies must be displayed in the **primary** device - *see "Switching/Enabling Displays (Driver Controls)" on page 3 - 12*.

DVD playback is not supported in **Multi-monitor** mode.

DVD Regional Codes

DVD region detection is device dependent, not OS dependent. You can select your module's region code **5** times. The fifth selection is permanent. This cannot be altered even if you change your operating system or you use the module in another computer.

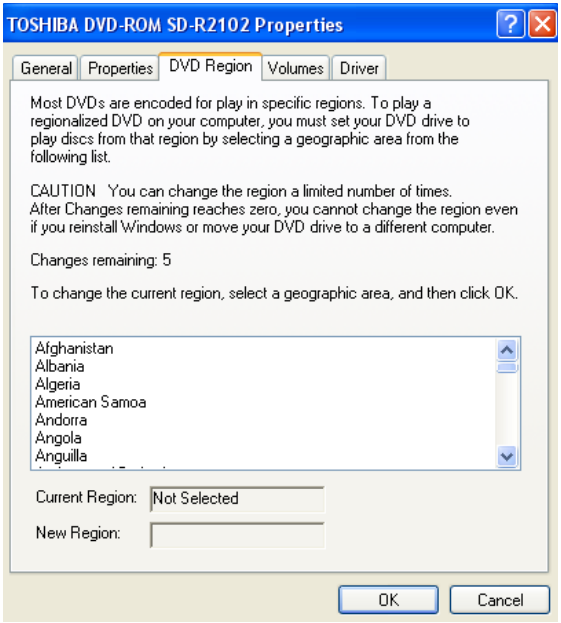

TOSHIBA DVD-ROM SD-R2102 Properties
General
Properties
DVD Region
Volumes
Driver
Most DVDs are encoded for play in specific regions. To play a regionalized DVD on your computer, you must set your DVD drive to play discs from that region by selecting a geographic area from the following list.
CAUTION You can change the region a limited number of times. After Changes remaining reaches zero, you cannot change the region even if you reinstall Windows or move your DVD drive to a different computer.
Changes remaining: 5
To change the current region, select a geographic area, and then click OK.
Afghanistan
Albania
Algeria
American Samoa
Andorra
Angola
Anguilla
Current Region:
Not Selected
New Region:
OK
Cancel

Figure 2 - 7
DVD Regional Codes (Windows XP)

Changing the DVD Regional Codes

Go to the **Control Panel** in *WindowsXP/Windows 2000* and double-click **System > Hardware** (tab), click **Device Manager**, then click the + next to **DVD/CD-ROM drives**. Double-click on the DVD-ROM device to bring up the **Properties** menu, and select the **DVD Region** (tab) to bring up the control panel as seen in *"DVD Regional Codes (Windows XP)" on page 2 - 16*.

DVD Regional Coding	
Region	**Geographical Location**
1	USA, Canada
2	Western Europe, Japan, South Africa, Middle East & Egypt
3	South-East Asia, Taiwan, South Korea, The Philippines, Indonesia, Hong Kong
4	South & Central America, Mexico, Australia, New Zealand
5	N Korea, Russia, Eastern Europe, India & Most of Africa
6	China

Table 2 - 3
DVD Regional Coding

Changing Region Codes in Windows 98/Me

If you are using *Windows 98* or *Windows Me* then you will need to use your DVD software player to change the regional code.

The PC Card Slot (Model A only)

The computer is equipped with a type II PCMCIA 3.3V/5V/12V socket.

Inserting and Removing PC Cards

- Align the PC card with the slot 1 and push the card in until it locks into place.
- To remove a PC card, simply press the eject button 2 next to the slot.

Figure 2 - 8
PC Card Slot

The PC Card Problem in Windows 98

See *"The PC Card Problem in Windows 98" on page 7 - 26* for information.

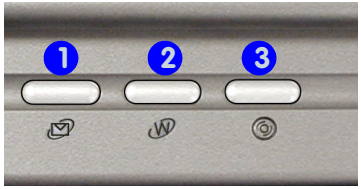
The PC Card Problem in Windows ME

See *"The PC Card Problem in Windows Me" on page 7 - 27* for information.

Hot-Keys

The computer has three Hot-Key buttons for quick one button access to e-mail 1, the Internet 2 or a user-defined application 3. To make full use of the Hot-Key features you must install the Hot-Key driver (see *"What to Install" on page 4 - 2*).

Figure 2 - 9
Hot-Keys



Programming the Hot-Keys

Non-Default E-Mail and Browser Programs

It is possible to configure both the email and browser hot-keys to open non-default mail and browser programs. Follow the procedure outlined on page *2 - 21* but highlight either the **Browser** or **Email** in **step 2**. Choose **Custom** to browse to the program of your choice as per the remaining instructions. The Hot-Key will now open this program.

Hot-Keys	Function
	Activate the default e-mail program
	Activate the default Internet browser
	Activate the user specified application (e.g. Microsoft Word or Excel

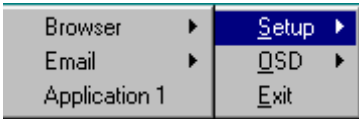
Table 2 - 4
Hot-Keys

After installing the Hot-Key driver (see *"What to Install" on page 4 - 2*), you may have to configure or change the settings.

To configure and specify an application for **Application 1** (the default **Hot-Key** setting is for the **CD Player** application), you must follow the instructions on the next page.

1. **Right click** the Hot-Key icon on the **taskbar** and the following menu will appear.

2. Select **Setup** from the menu and scroll to **Application 1** and press **Enter**.



3. An **Open** dialog box will appear on the screen.
4. **Browse** to the directory where the desired application**.exe** (see the sidebar) program exists.
5. **Double-Click** on the program file or choose **Open**.
6. The Hot-Key is now set to execute that program.

Application.exe

You will need to locate the actual **application executable (.exe) file**, not just the **shortcut**. To find the application right-click its **shortcut** on the desktop and click **Properties**. Click the **shortcut** (tab) and see where the executable file is located by clicking the **Find Target** (button).

Other Keyboards

If your keyboard is damaged, or you just want to make a change, you can use any standard PS/2 or USB keyboard. The system will detect and enable it automatically. However special functions/hot-keys unique to the system's regular keyboard may not work.

Function Keys

On the bottom-left of the keyboard is the **Fn** key, or Function key. The **Fn** key allows you to change some of the operational features of your computer instantly. Press and hold the **Fn** key, then press the appropriate function key (**F3**, **F4**, **F5**, etc.) located at the top of the keyboard (see *Figure 2 - 10 on page 2-24*).

Keys	Description
Fn+F3	Mute Toggle
Fn+F4	Suspend/Resume
Fn+F5	Audio Volume Decrease
Fn+F6	Audio Volume Increase
Fn+F7	Switch Display between LCD, CRT & LCD and CRT
Fn+F8	LCD Brightness Decrease
Fn+F9	LCD Brightness Increase

Table 2 - 5
Function Keys

The Numeric Keypad

The keyboard has an embedded numerical keypad for easy numeric data input. The keypad has a yellow typeface.

To use the embedded keypad simply activate the **Number Lock** feature by pressing and holding the **Fn** key, while simultaneously pressing the **Num Lk** key at the top right of the keyboard. You may check if **Num Lk** is enabled or not by looking at the LED status indicators (see *"LED Status Indicators" on page 2 - 7*).

You may type the numbers directly from the embedded keypad as long as **Num Lk** is enabled.

Special Characters

Some software applications allow the number-keys to be used with **Alt** to produce special characters. These special characters can only be produced by using the numeric keypad. Regular number keys will not work. Make sure **Number Lock** is on.

Function Keys and Numeric Keypad

Figure 2 - 10
Function Keys & Numeric Keypad

1. Fn Key
2. Mute Toggle
3. Suspend/Resume State Toggle
4. Audio Volume Decrease
5. Audio Volume Increase
6. CRT/LCD/LCD and CRT Toggle
7. LCD Brightness Decrease
8. LCD Brightness Increase
9. Num Lk
10. Scr Lk
11. Numeric Keypad

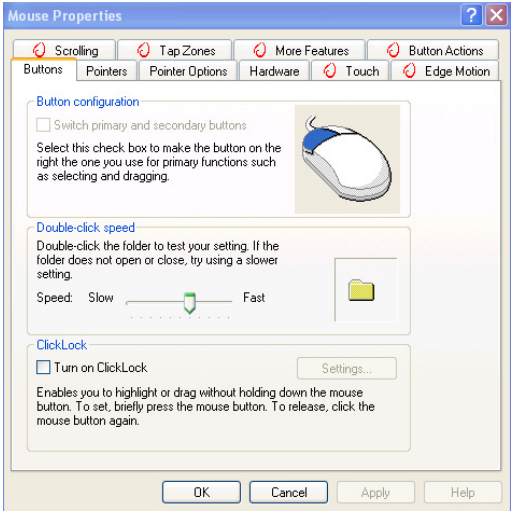
TouchPad and Buttons

The pointing device features a sensitive glide pad for precise movements. It functions the same way as a two-button mouse (the central Rocker Switch may be configured as a “third” button if you prefer). The right TouchPad button is the same as the right mouse button; the left TouchPad button is the same as the left mouse button.

Configuring the TouchPad and Buttons

Once you have installed the TouchPad driver, (see *"Install Order" on page 4 - 4*) you can configure the functions by double-clicking the TouchPad driver icon on the **taskbar** to bring up the **Mouse Properties** control panel (*Figure 2 - 11*). You may then configure the TouchPad tracking, buttons and Rocker Switch etc. to your preferences. You will find further information on this at www.synaptics.com.

Figure 2 - 11
Mouse Properties


Mouse Properties
Scrolling
Tap Zones
More Features
Button Actions
Buttons
Pointers
Pointer Options
Hardware
Touch
Edge Motion
Button configuration
Switch primary and secondary buttons
Select this check box to make the button on the right the one you use for primary functions such as selecting and dragging.
Double-click speed
Double-click the folder to test your setting. If the folder does not open or close, try using a slower setting.
Speed: Slow Fast
ClickLock
Turn on ClickLock
Settings...
Enables you to highlight or drag without holding down the mouse button. To set, briefly press the mouse button. To release, click the mouse button again.
OK
Cancel
Apply
Help

Mouse

You can also add a mouse to your notebook computer. You can use a mouse through either the PS/2 interface or through one of the USB ports.

Mouse Driver

If you are using an external mouse your operating system may be able to auto-configure your mouse during its installation or only enable its basic functions. Be sure to check the device's user documentation for details.

Adding a Printer

The most commonly used peripheral is a printer. The following conventions will help you to add a printer, however it is always best to refer to the printer manual for specific instructions and configuration options.

USB Printer

Most new printers have a USB interface connection. There are three USB ports on your notebook computer and you may use any one of the ports to connect the printer.

Install Instructions:

1. Set up the printer according to its instructions (unpacking, paper tray, toner/ink cartridge etc.).
2. Turn ON the computer.
3. Turn ON the printer.
4. Connect the printer's USB cable to one of the USB ports on the computer.
5. *Windows* will identify the printer and either load one of its own drivers or ask you to supply one. Follow the on-screen instructions.

Parallel Printer

This is still the most common type of printer.

Install Instructions:

1. Set up the printer according to its instructions (unpacking, paper tray, toner/ink cartridge etc.).
2. Attach the parallel cable to the printer.
3. Connect the printer's parallel cable to the parallel port at the rear of the computer (see *"Rear View" on page 1 - 21*).
4. Turn ON the printer.
5. Turn ON the computer.
6. *Windows* will identify the printer and either load one of its own drivers or ask you to supply one. Follow the on-screen instructions.

Chapter 3: Advanced Controls

Overview

This chapter covers:

- Advanced video controls
- Power and battery management features

Drivers

You are unable to use most advanced controls until the necessary drivers and utilities are properly installed. If your system hasn't been properly configured (your service representative may have already done that for you), refer to ***"Install Order" on page 4 - 4***, for installation instructions.

Note: All operating system pictures in this manual are from the ***Microsoft Windows XP*** OS.

Protecting the LCD

Do not allow any foreign objects (i.e. paper or plastic) to get between the lid/LCD and the work panel. They could damage or scratch the LCD and/or accidentally activate the close cover switch.

Advanced Video Controls

This section is about making adjustments for the LCD, and switching display devices.

Opening the LCD

As you open the lid, adjust it so you can look at the screen straight on, without any glare. If necessary, adjust the brightness controls (**Fn** + **F8/F9**).

Figure 3 - 1
Brightness Controls

Video Driver Controls

The video interface lets you change the screen resolution and color output to whatever is most comfortable/efficient for you. This is a matter of hardware, video memory and the driver for your operating system. The driver interface shows the available options.

You can switch display devices from the **Display Properties** control panel in *Windows* as long as the video driver is installed (see ***"Install Order" on page 4 - 4***).

Depending on the configuration purchased, the LCD is capable of supporting the following resolutions, as long as the video driver is installed:

- 14.1" XGA TFT LCD - resolution = 1024 * 768
- 15.0" XGA TFT LCD - resolution = 1024 * 768
- 15.0" SXGA+ TFT LCD - resolution = 1400 * 1050

Screen Resolution/ Screen Area Note

You may set the resolution to a higher setting than the panel supports, however this will require you to pan (scroll) around the screen as the display area will be larger than what you can see on the LCD.

Making Adjustments for the Display

The higher the resolution you set the LCD for, the more information the LCD can display on screen. To change the LCD's resolution and color depth go to the **Display Properties** control panel:

1. Click **Start**, point to **Settings** and click **Control Panel** (if you are in **Category View** choose **Appearance and Themes**).
2. Double-click **Display** (icon).
3. In the **Display Properties** dialog box, click **Settings** (tab).
4. In **Screen area/resolution**, move the slider to the preferred setting for **resolution** (see ❶ *in **Figure 3 - 2 on page 3-5***).
5. In **Colors/Color quality**, click the arrow and scroll to the preferred setting for **color depth** (see ❷ *in **Figure 3 - 2 on page 3-5***).

Display Properties

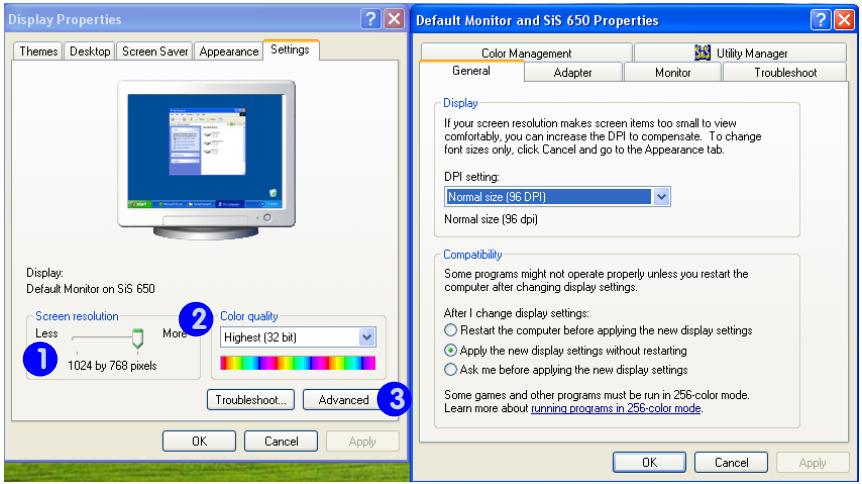


Figure 3 - 2
Advanced Display Properties

When the **Display Properties** control panel is open, click the **Advanced** 3 (button) to bring up the options tabs. Clicking through these tabs allows you to make any video adjustments you require.

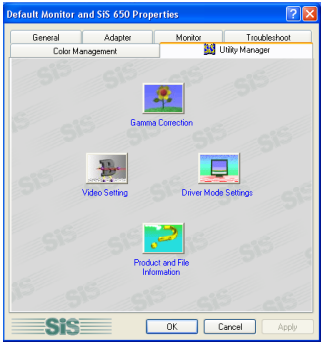
SiS Utility Tray/Manager

With the video driver installed additional control panels are available. To get to the control panels do the following:

1. Click **Start**, point to **Settings** and click **Control Panel** (if you are in **Category View** choose **Appearance and Themes**).
2. Double-click **Display** (icon).
3. In the **Display Properties** dialog box, click **Settings** (tab).
4. Click **Advanced** (button), and click **SiS Utility Manager** (tab).
5. Choose the setting you wish to change.

OR

1. Right-Click the **SiS Utility Tray icon** in the taskbar.
2. Point to **Display Properties** and choose the setting you wish to change.



SiS Utility Tray icon

Figure 3 - 3
SiS Utility Tray/ Manager Windows XP

You may make changes to the Driver Mode Setting, Video Settings, Gamma Correction Settings (for VGA monitors) and General Information by clicking the appropriate tab and adjusting the setting. Some screen examples are shown below.

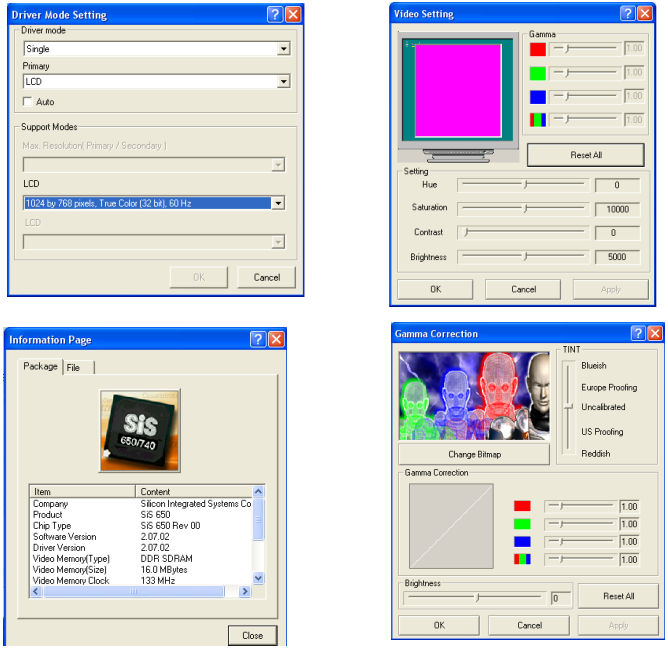


Figure 3 - 4
SiS Utility Tray/ Manager Setting Tabs

Video Memory Usage

3D Applications, such as games and CAD software, tend to require more video memory than most other applications. Check your application's user documentation for video memory requirements.

Video Memory

The computer does not have dedicated video memory. It makes use of a portion of system memory as video memory. By default, the video memory is set to 32MB. You may also set it to 16MB or 64MB (maximum) in the BIOS (see *"Embedded Share Memory (Advanced Menu>Advanced Chipset Control)" on page 5 - 11*). Bear in mind that the more overall memory is used as video memory, the less is available as system memory. This memory is allocated from your system memory e.g. if your computer has 128MB of memory (RAM), then 32MB will be allocated to video leaving the system with 96MB of RAM.

Display Devices

Besides the built-in LCD, you can also use an external CRT connected to the external monitor (CRT) port as your display device. You may also connect a TV. The following are the display options:

1. The built-in LCD (**Single**).
2. A CRT (external monitor) connected to the external monitor (CRT) port at the rear of the computer (**Single**).
3. A TV connected to the S-Video port at the rear of the computer (**Single**).
4. The built-in LCD and a CRT showing the same image (**Mirror**).
5. The built-in LCD and a TV showing the same image (**Mirror**).
6. The built-in LCD and a CRT showing different images (**Multi-monitor**).
7. The built-in LCD and a TV showing different images (**Multi-monitor**).
8. A CRT and TV showing different images (**Multimonitor**) - see sidebar note.

The table on the following page shows the available options.

CRT and TV Display Setting

If you intend to use a TV and CRT as your display devices, the TV must be set as the primary **Display_1**, and the CRT as the secondary **Display_2** (*Figure 3 - 8 on page 3-16*).

Display Options

Multiple Display Modes & DVD Playback

In **Mirror** mode DVD movies must be displayed in the **primary** device - *see "Switching/Enabling Displays (Driver Controls)" on page 3 - 12*.

DVD playback is not supported in **Multimonitor** mode.

Display Mode	Windows 98SE, ME & XP	Windows 2000
Single	✓	✓
Mirror	✓	✓
Multimonitor	✓	Not Available

Single - Either the LCD, CRT or TV as a display device.
Mirror - The LCD, CRT or TV outputting the same view.
Multimonitor -The LCD, CRT or TV outputting a different view (*not available in Windows 2000*).

Table 3 - 1
Display Options

Switching/Enabling Displays (Keyboard Toggle)

To simply switch display devices, or enable other devices, with the **Fn** + **LCD/CRT (F7)** toggle do the following:

1. Plug the CRT or TV into the appropriate port.
2. Press and hold the **Fn** key, while simultaneously pressing the **F7** key.
3. You may toggle through the options to display the LCD only, the LCD and the external display together, and the external display alone (make sure you allow time for the screens to refresh as you toggle through).

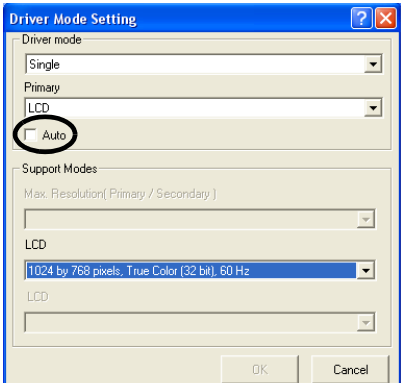
Note: If you only use the keyboard toggle to switch through the display options you will not have all the configuration options available to you. If you want to use the options listed in *"Display Options" on page 3 - 10* then use the driver control panel to configure the settings as per *"Switching/Enabling Displays (Driver Controls)" on page 3 - 12*.

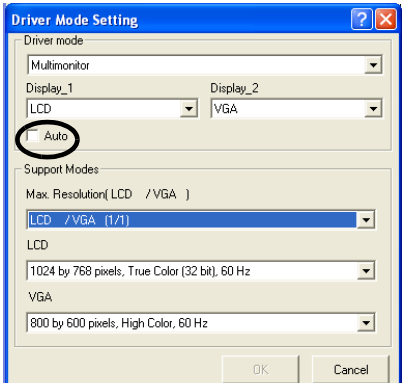
Switching/Enabling Displays (Driver Controls)

With the **video driver installed**, you also can use its built-in controls to do the switching. If you have not installed the video driver, refer to (see *"Install Order" on page 4 - 4*) for setup instructions. To use the display options from the video driver control panel do the following:

1. Plug the CRT or TV into the appropriate port.
2. Following the instructions in *"SiS Utility Tray/Manager" on page 3 - 6*, and choose **Driver Mode Setting**.
3. If the device listbox doesn't show any plugged in devices uncheck the **Auto** option.

Figure 3 - 5
Disable Auto





4. If you have chosen the **mirror** option, choose which device is to be **primary**, and which is to be **secondary**.
5. Click **OK > OK** to apply the settings (you may need to give your CRT a few seconds to refresh).
6. Click **Yes** to keep the settings.
7. If you have chosen the **Multimonitor** option, choose which device is to be **Display_1**, and which is to be **Display_2** (the VGA option for the external monitor may only be set to Display_2).
8. Click **OK >Yes** to restart your computer.
9. Upon restart the displays will be configured for you.

Note: If you are using *Windows 98SE* or *Windows ME*, go to the **Display Properties** Window, click **Settings**, and click "**Extend my Windows desktop onto this monitor**", then click **Apply**.

10. You can reconfigure the displays from the **Display Properties > Settings** control panel (see ***"Display Properties" on page 3 - 15***).
11. Make sure you have ticked the "**Extend my Windows desktop onto this monitor.**" check box as illustrated in ***Figure 3 - 7 on page 3-15***.

Switching Display Modes

To switch back from **Multimonitor** mode to either **Mirror** or **Single** Mode, you will be required to restart the computer.

Vertical Refresh Rate

The vertical refresh rate of your CRT is important. If it is too low and/or you're using fluorescent lighting, the screen will appear to flicker. To reduce flickering on a CRT, use faster refresh rates (we recommend a refresh rate of 72Hz or more). But first check your monitor's documentation to make sure it can support the rates listed by the video driver. The default refresh rate for VGA monitors (without drivers) is 60Hz.

Attaching a Monitor (CRT)

If you prefer to use a monitor (CRT) you may change the vertical refresh rate from the following control panel:

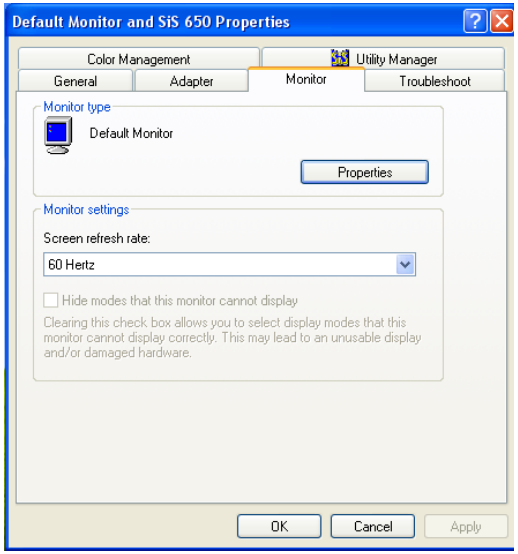


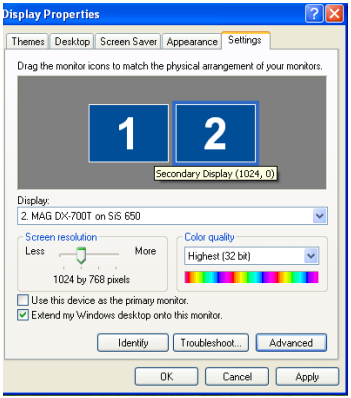
Figure 3 - 6
Monitor Properties

Mirror

In this mode the display of the two devices is the same.

Multimonitor

This mode allows a desktop to span the displays to act as a large work area, thus creating a lot more screen area for display. Use the **Display Properties** control panel to drag the monitors to match the physical arrangement you wish to use. Make sure you have ticked the check-box "**Extend my Windows desktop onto this monitor**" in order to enable this option.



Windows XP

Multimonitor

Use the Display Properties control panel to drag the monitors to match the physical arrangement you wish to use. In the example shown in ***Figure 3 - 7*** the primary monitor **1** is on the left, the other display is on the right.

Drag any icons or windows across to the other display desktop. It is therefore possible to have one program visible in one of the monitors, and a different program visible in the other monitor.

Figure 3 - 7
Display Properties

CRT and TV Display setting

If you intend to use a TV and CRT as your display devices, the TV must be set as the primary **Display_1**, and the CRT as the secondary **Display_2** (see *Figure 3 - 8*).

TV Display

To display desktop images on a TV display, connect the TV to your computer by using an S-Video cable from the TV to the port at the rear of the computer. Follow the instructions in *"Switching/Enabling Displays (Driver Controls)" on page 3 - 12*. The TV system format may be switched between PAL and NTSC in the BIOS (see *"TV System (Advanced Menu>Advanced Chipset Control)" on page 5 - 12*). You can also adjust the TV Scan Line Mode from the BIOS.

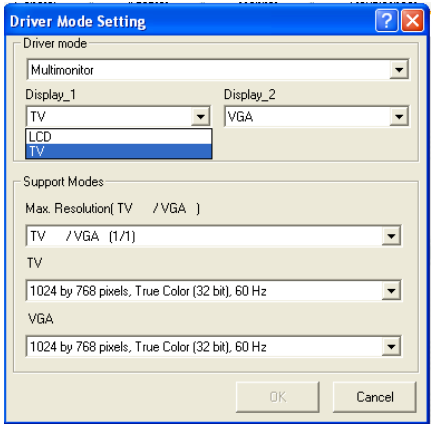


Figure 3 - 8
CRT and TV Display

Power Management Features

To conserve power, especially when using the battery, your notebook computer uses ACPI power management. Power management conserves power by controlling individual components of the computer (the monitor and hard disk drive) or the whole system.

Advanced Configuration and Power Interface (ACPI)

The ACPI interface provides the computer with enhanced power saving techniques and gives the operating system (OS) direct control over the power and thermal states of devices and processors. For example, it enables the OS to set devices into low-power states based on user settings and information from applications. ACPI is fully supported in *Windows ME, Windows 2000* and *Windows XP* (see sidebar note).

OS Note

Power management functions will vary slightly depending on your operating system. For more information it is best to refer to the user's manual of your operating system.

(**Note**: All pictures used on the following pages are from the *Windows XP* OS).

BIOS Settings

You may use the **CPU Throttle** setting to manage power in the BIOS. This is especially useful for users who are interested in running *DOS* or other non "Plug-N-Play" OS's (see *"CPU Throttle (Advanced Menu)" on page 5 - 13*).

Enabling Power Options

Power Options/Management are enabled through the control panel in your *Windows* system. With other operating systems you may also have some form of power management available, so check your documentation.

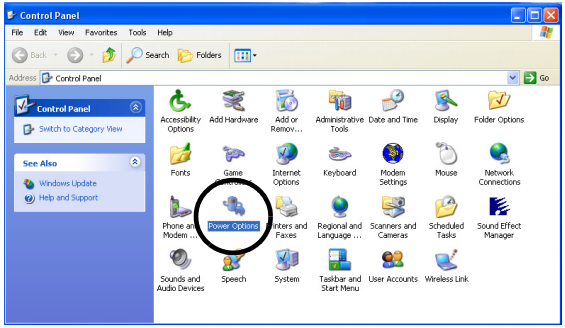


Figure 3 - 9
Power Options Control Panel

Hibernate Mode In Windows 98SE

Hibernate mode is not available in **Windows 98SE**.

You may conserve power through individual components or throughout the whole system.

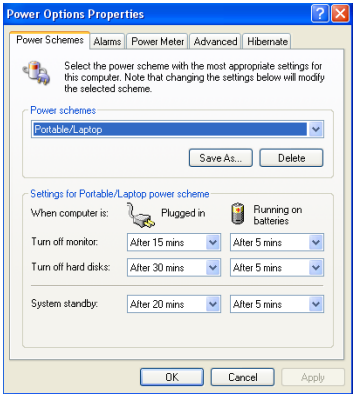
Conserving Power Through Individual Components

Monitor Standby

To conserve power, you can set the monitor to turn off after a specified time.

Hard Disk Standby

The computer's hard disk motor will be turned off if the hard disk drive has not been accessed for a specified period of time. If the system reads or writes data, the hard disk motor will be turned back on.



Resuming Operation

The system can resume from Monitor or Hard Disk Standby by pressing a key on the keyboard.

Figure 3 - 10
Power Schemes

Battery Critically Low

Sleep Button

When the battery reaches a critically low power state, the system will either go into Hibernate or Standby mode dependant upon the setting of the Sleep Button (*"Suspend/Resume Keys" on page 3 - 23*).

Hibernate Mode In Windows 98SE

Hibernate mode is not available in **Windows 98SE**.

Conserving Power Throughout the System

With this function you can stop the notebook's operation and restart where you left off. This system features **Standby** and **Hibernate** suspend mode levels (**Hibernate** mode will need to be enabled by clicking the option in the **Hibernate** tab in the **Power Options** control panel - *Figure 3 - 11 on page 3-22*).

Hibernate Mode vs. Shutdown

"Hibernate Mode" and "Shutdown" are the same in that the system is off and you need to press the power button to turn it on. The main difference between them is:
When you come back from hibernation, you can return to where you last left off (what was on your desktop) without reopening the application(s) and file(s) you last used.You can use either method depending on your needs.

Standby Mode vs. Hibernate Mode

If you want to stay away from your work for just a while, you can put the system on standby instead of in hibernation. It takes a longer time to wake up the system from Hibernate Mode than from Standby Mode.

Standby

Standby saves the least amount of power, but takes the shortest time to return to full operation. During Standby the hard disk is turned off, and the CPU will stop. All open applications are retained in memory. When you are not using your computer for a certain length of time, which you specify in the operating system, it will enter Standby mode to save power.

The system can resume from Standby mode by:

- Pressing the Power Button (if configured to do so - see *"Configuring the Power Button" on page 3 - 23*).
- An alarm resume that is enabled and expires.
- Pressing the Suspend/Resume key combination on the built-in keyboard.
- An incoming call is received on the modem.
- Wakeup on LAN.

Hibernate Mode In Windows 98SE

Hibernate mode is not available in **Windows 98SE**.

Battery Critically Low

Sleep Button

When the battery reaches a critically low power state, the system will either go into Hibernate or Standby mode dependant upon the setting of the Sleep Button (*"Suspend/Resume Keys" on page 3 - 23*).

System Resume

To get the system to resume from Standby mode (when powered by the battery) when the battery has reached a critically low power state, firstly plug-in the AC adapter.

Hibernate Mode In Windows 98SE

Hibernate mode is not available in **Windows 98SE**.

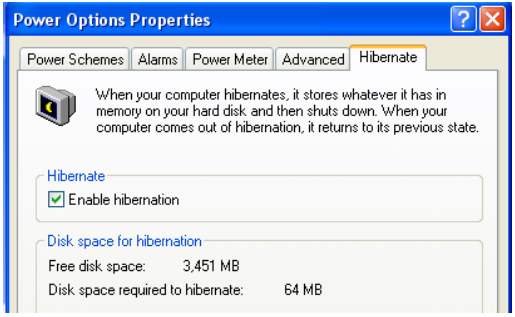
Hibernate

Hibernate uses no power and saves all of your information on a part of the HDD before it turns the system off. Although it saves the most power it takes the longest time to return to full operation. You can set your notebook to automatically enter Hibernate mode when the battery power is almost depleted. You will need to enable Hibernate mode from the Hibernate tab in the Power Options control panel.

The system will resume from Hibernate mode by:

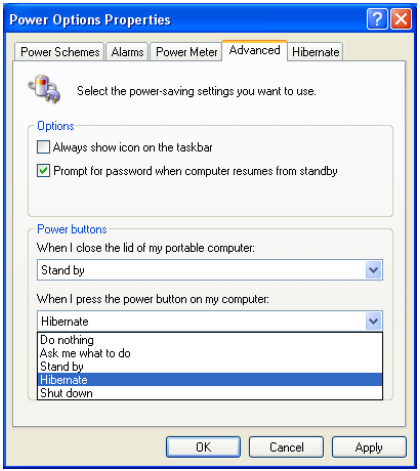
- Pressing the power button.
- Wakeup on modem ring.
- Wakeup on LAN.

Figure 3 - 11
Enable Hibernation

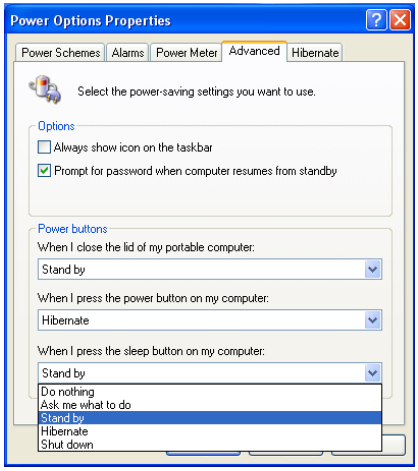

Power Options Properties
Power Schemes
Alarms
Power Meter
Advanced
Hibernate
When your computer hibernates, it stores whatever it has in memory on your hard disk and then shuts down. When your computer comes out of hibernation, it returns to its previous state.
Hibernate
Enable hibernation
Disk space for hibernation
Free disk space: 3,451 MB
Disk space required to hibernate: 64 MB

Configuring the Power Button

The Power button may be set to send the computer in to either **Standby** or **Hibernate** modes (see *Figure 3 - 12*). In **Standby** mode the LED will blink green, in **Hibernate** mode the LED will be off. If you are in a power saving mode set to save power through individual components (e.g. hard disk, monitor), the LED will remain green.



Power Button



Sleep Button

Suspend/Resume Keys

You may also configure the **Suspend/Resume** key combination (**Fn + F4**) from the menu illustrated in *Figure 3 - 12*. In *Windows* this is referred to as the **Sleep** button.

Bear in mind that if you choose to set the system to **Shut Down** from any of the Power Buttons options in *Figure 3 - 12*, then you will lose any unsaved data.

Figure 3 - 12
Power Options (Advanced - Power Buttons)

Battery Caution

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Battery Information

Please follow these simple guidelines to get the best use out of your battery.

New Battery

Always charge a new battery before using it.

Battery Life

Your notebook computer's battery life is dependent upon many factors, including the programs you are running, and peripheral devices attached. Power Management settings in the OS will help prolong the battery life if configured appropriately.

Battery life may be shortened through improper maintenance. To optimize the life and improve its performance, fully discharge and recharge the battery at least once every 30 days.

Battery FAQ

How do I completely discharge the battery?

Use the computer with battery power until it shuts down due to a low battery. Don't turn off the computer by yourself even when you see a message that indicates the battery is critically low, just let the computer use up all of the battery power and shut down on its own (it is best to disable the **Power Options/Power Management** functions in the **Control Panel**). As the battery nears the end of its life don't work on any critical files.

How do I fully charge the battery?

When charging the battery, don't stop until the LED charging indicator light turns green.

How do I maintain the battery?

Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges.

Battery Critically Low

Sleep Button

When the battery reaches a critically low power state, the system will either go into Hibernate or Standby mode dependant upon the setting of the Sleep Button (*"Suspend/Resume Keys" on page 3 - 23*).

System Resume

To get the system to resume from Standby mode (when powered by the battery) when the battery has reached a critically low power state, firstly plug-in the AC adapter.

Conserving Battery Power

Display Brightness

The LCD display consumes a lot of power, so lowering the brightness level will save power.

Applications and External Devices

Different applications and external devices consume battery power even when they are not being used.

To conserve battery power we recommend:

- Closing modem or communication applications when they are not being used.
- Disconnecting any unnecessary external devices from the computer.

Removing and Replacing the Battery

Usually you will not need to remove your battery. If you follow the tips given to manage and extend your battery life on the preceding pages your battery should last a long time. However there may be times when you are required to remove, swap or replace the battery. To do so follow these instructions:

1. Shut the computer down and turn it over.
2. Locate the battery release latch 1 in ***Figure 3 - 13***.

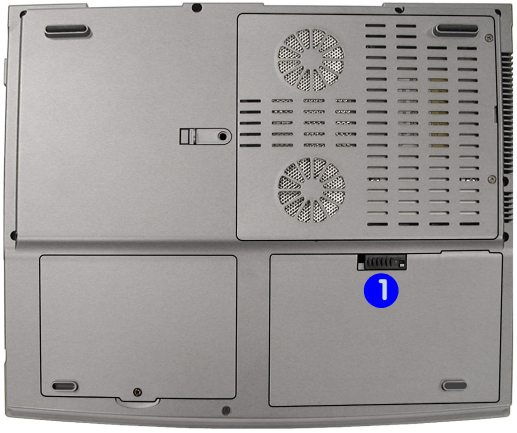
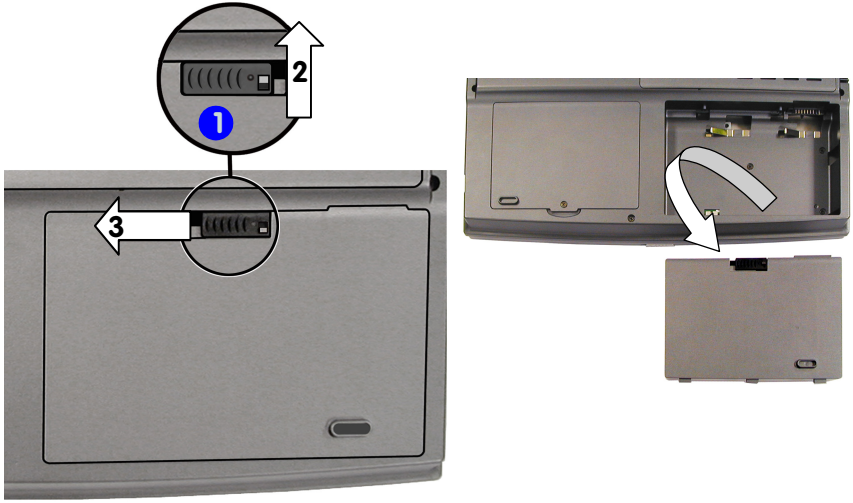


Figure 3 - 13
Battery Release Latch

3. Push the lock switch 1 on the latch in the direction indicated by arrow 2 in *Figure 3 - 14*.
4. Slide the latch to the left as indicated by arrow 3 and the battery should pop-up.
5. Take the battery out, and replace it with the new battery.
6. Slide the latch back to the right and push the lock switch back to the locked position.

Figure 3 - 14
Battery Unlock and Release



Chapter 4: Drivers & Utilities

Overview

This chapter deals with installing the drivers and utilities essential to the operation or improvement of some of the notebook PC's subsystems. The system takes advantage of some newer hardware components for which the latest versions of most available operating systems haven't built in drivers and utilities. Thus, some of the system components won't be auto-configured with an appropriate driver or utility during operating system installation. Instead, you need to manually install some system-required drivers and utilities. In this chapter, we group driver and utility installation instructions by operating system. The following operating systems are covered.

- *Windows 98 Second Edition*
- *Windows ME*
- *Windows 2000 Professional*
- *Windows XP*

Assumption

We assume that you will install all drivers and utilities from the built-in CD device and it is assigned to **Drive D:** In addition, all file extensions can be seen [see ***"Navigate (Browse..) to D:" on page 4 - 3***].

What to Install

The ***Device Drivers & Utilities + User's Manual CD-ROM*** contains the drivers and utilities necessary for the proper operation of the notebook PC. *Table 4 - 1 on page 4-4* lists what you need to install manually according to your choice of the operating system.

You should install the drivers in the following order **for all OS's except Win98SE**:

1. Audio
2. Modem
3. LAN
4. Video

All other drivers may follow in any order you wish, however **it is very important that these drivers are installed in the order indicated above**.

For Windows 98SE the install order is as follows:

1. LAN
2. Audio
3. Modem
4. Video

Navigate (Browse..) to D:

You will notice that many of the instructions for driver installation require you to **Navigate (Browse) to D:.**

In this case D: is the drive specified for your CD device. Not all computers are setup the same way, and some computers have the CD listed under a different drive letter - e.g. if you have two hard drives (or hard disk partitions) one may be designated as drive C: and the other as D: In this case the CD device may be designated as drive E: - Please make sure you are actually navigating to the correct drive letter for the CD device.

When you click the **Browse** (button) after clicking **Run** in the **Start** menu you will see the "**Look in:**" dialog box at the top of the **Browse** window. Click the scroll button to navigate to **My Computer** to display the devices and drive letters.

Authorized Driver Message

If you receive a message stating that the driver you are installing is not authorized (**Digital Signature Not Found**), just click **Yes** (**Continue Anyway**) to ignore the message and continue the installation procedure.

You will receive this message in cases where the driver has been released after the version of *Windows* you are currently using. All the drivers provided will have already received certification for *Windows*.

Version Conflict Message

During driver installation if you encounter any "file version conflict" message, please click **Yes** to choose to keep the existing (newer) version.

Install Order

Feature	Win98SE	Feature	Win ME	Win 2000	Win XP
LAN	*4 - 5*	Audio	*4 - 9*	*4 - 13*	*4 - 17*
Audio	*4 - 5*	Modem	*4 - 10*	*4 - 14*	*4 - 18*
Modem	*4 - 7*	LAN	*4 - 11*	*4 - 15*	*4 - 19*
Video	*4 - 7*	Video	*4 - 11*	*4 - 15*	*4 - 19*
TouchPad	*4 - 8*	TouchPad	*4 - 12*	*4 - 16*	*4 - 20*
Hot-Key	*4 - 8*	Hot-Key	*4 - 12*	*4 - 16*	*4 - 20*
Auto Mail	*4 - 8*	Auto Mail	*4 - 12*	*4 - 16*	*4 - 20*
USB FDD	*4 - 8*	USB FDD			

Table 4 - 1
What to Install

Service Pack 2

Make sure you have installed **Windows 2000 Service Pack 2**.

Windows 98 Second Edition

This section covers driver and utility installation instructions for ***Windows 98 SE***.

What To Have Ready

In some cases when drivers are to be installed you will need to have present your **OS CD** - *Windows 98 Second Edition*.
If prompted you may swap your *Device Drivers & Utilities + User's Manual CD-ROM* with your OS CD-ROM and back again when required.

LAN (Win98SE)

1. Click **Start** (menu), point to **Settings** and click **Control Panel**. Double-click **System** (icon) and then click **Device Manager** (tab).
2. Click "+" next to **Other devices** (if its sub-items are not shown).
3. Double-click **PCI Ethernet Controller** and click **Reinstall Driver** (button).
4. When the *Update Device Driver Wizard* appears, click **Next** > **Next** (make sure that you have selected **"Search for a better driver than the one your device is using now. (Recommended)"**).
5. Select ONLY "**Specify a location"** (make sure the other boxes do not have a tick inside them) and navigate (Browse...) to **D:\Drivers\LAN\WIN98SE**.
6. Click **OK** > **Next** > **Next**.
7. When you are prompted ***'Please insert the disk labeled "Windows 98 Second Edition CD-ROM" and then click OK'*** eject the CD-ROM in your drive and insert the *Windows CD*.
8. Give the computer a few seconds to recognize that the disk is in the drive, then click **OK**.
9. Click **Finish > Yes** to restart your computer when prompted.
10. The network adapter is now ready for configuration.

Audio (Win98SE)

1. Click **Start** (menu) > **Run...**
2. Navigate (Browse..) to **D:\Drivers\AUDIO\Setup.exe** and click **OK**.
3. To continue click **Next**.
4. Click **Finish** to restart your computer.
5. *Windows* will then tell you "**New Hardware Found**" and begin to install the drivers for you.
6. When you are prompted ***'Please insert the disk labeled "Windows 98 Second Edition CD-ROM" and then click OK'*** eject the CD-ROM in your drive and insert the *Windows CD*.
7. Give the computer a few seconds to recognize that the disk is in the drive, then click **OK** (click **Yes** if asked if you want to continue at any time).
8. After restart you may check the **Sounds Control Panel** (**Start** Menu and point to **Settings** and click **Control Panel** then double-click the **Sounds icon**) and select one of the sounds marked with a speaker to preview. You will see the **Sound Manager** appear in the **Task Bar** alongside the date, and the **AV Rack** control panel should be visible on the desktop.

Modem (Win98SE)

1. Click **Start** (menu), point to **Settings** and click **Control Panel**. Double-click **System** (icon) and then click **Device Manager**.
2. Click "+" next to **Other devices** (if its sub-items are not shown).
3. Double-click **PCI Card** and click **Reinstall Driver** (button).
4. When the *Update Device Driver Wizard* appears, click **Next** > **Next** (make sure that you have selected **"Search for a better driver than the one your device is using now. (Recommended)"**.
5. Select ONLY **"Specify a location:"** (make sure the other boxes do not have a tick inside them) and navigate (Browse...) to **D:\Drivers\Modem\WIN98SE** and click **OK > Next > Next**.
6. After the updated driver is installed, click **Finish**.
7. Close the **Smart Link 56K Voice Modem Properties** and **System Properties (dialog box)**. The modem is ready for dial-up configuration.

Modem Country Selection

Be sure to check if the modem country selection is appropriate for you (**Control Panel** > **Modems**).

Video (Win98SE)

1. Click **Start** (menu) > **Run...**
2. Navigate (Browse**..**) to **D:\Drivers\VIDEO\WIN98&ME\setup.exe** and click **OK**.
3. To continue click **Next > Next > Next > Next**.
4. Click **Finish** to restart your computer.

TouchPad (Win98SE)

1. Click **Start** (menu) > **Run...**
2. Navigate (Browse**..**) to **D:\Drivers\TOUCHPAD\WIN98SE\Setup.exe** and click **OK**.
3. Choose the language you prefer.
4. To continue click **Next > Next > Next**.
5. Click **Finish** to restart your computer.
6. You may then configure your TouchPad as outlined in *"TouchPad and Buttons" on page 2 - 25*.

Hot-Key (Win98SE)

1. Click **Start** (menu) > **Run...**
2. Navigate (Browse..) to **D:\Drivers\HOTKEY\CNK001.exe** and click **OK**.
3. Choose the language you prefer.
4. Click **Next**.
5. Click **Finish** to restart your computer.
6. You may then configure your Hot-Key buttons as outlined in *"Hot-Keys" on page 2 - 19*.

Auto Mail (Win98SE)

1. Click **Start** (menu) > **Run...**
2. Navigate (Browse..) to **D:\Drivers\Automail\setup.exe** and click **OK**.
3. To continue click **Next** > **Next**.
4. Click **Finish** to restart your computer.
5. You may run and configure the program from the **Start** (menu). Point to **Programs** and click **Auto Mail Checker**.
6. You may then access the program settings through the icon in the **taskbar**. For further details see *"Auto Mail Checker" on page 2 - 9*.

USB FDD (Win98SE)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\USB_FDD_W98\USBFDD.exe** and click **OK**.
3. To continue click **Next**.
4. Click **Finish** to restart your computer.

Windows ME Drivers

This section covers driver and utility installation instructions for *Windows Me.*

Audio (WinME)

1. Click **Start** (menu) > **Run...**
2. Navigate (Browse..) to **D:\Drivers\AUDIO\Setup.exe** and click **OK**.
3. Click **Next**.
4. Click **Finish** to restart your computer.
5. Go to the **Sounds and Multimedia Control Panel** (**Start** Menu and point to **Settings** and click **Control Panel** then double-click the **Sounds and Multimedia** icon).
6. Click the **Audio** tab.
7. Click **Advanced** in the **Sound Playback** Menu.
8. Under **Speaker Setup** select **5.1 Surround Speakers** from the pull-down menu and click **OK > OK** to close.
9. You will see the **Sound Manager** appear in the **Task Bar** alongside the date, and the **AV Rack** control panel should be visible on the desktop.

Modem (WinME)

1. Click **Start** (menu), point to **Settings** and click **Control Panel**. Double-click **System** (icon) and click **Device Manager**.
2. Click "+" next to **Other devices** (if its sub-items are not shown).
3. Double-click **PCI Card** and click **Reinstall Driver** (button).
4. When the *Update Device Driver Wizard* appears, select "**Specify the location of the driver (Advanced)**" and click **Next**.
5. Make sure that you have selected "**Search for a better driver than the one your device is using now. (Recommended)**".
6. Select ONLY (make sure the other boxes do not have a tick inside them) "**Specify a location:"**, and navigate (Browse...) to **D:\Drivers\Modem\WINME**.
7. Click **OK > Next > Next**.
8. Repeat the process outlined in **Steps 4 through 7** as follows.
9. Select "**Specify the location of the driver (Advanced)"** then click **Next**.
10. Make sure that you have selected "**Search for the best driver for your device. (Recommended).**".
11. Select ONLY (make sure the other boxes do not have a tick inside them) "**Specify a location:"**, and navigate (Browse...) to **D:\Drivers\Modem\WINME**.
12. Click **OK** > **Next > Next**.
13. Click **Finish** in both wizards and close the open windows.
14. The modem is ready for dial-up configuration.

Modem Country Selection

Be sure to check if the modem country selection is appropriate for you (**Control Panel >Modems**).

LAN (WinME)

1. Click **Start** (menu), point to **Settings** and click **Control Panel**. Double-click **System** (icon) and then click **Device Manager** (tab).
2. Click "+" next to **Network Adapters** (if its sub-items are not shown).
3. Double-click **Realtek RTL8139(A)-based PCI Fast Ethernet Adapter**.
4. Click the **Driver** (tab) and click the **Update Driver** (button).
5. When the *Update Device Driver Wizard* appears, select "**Specify the location of the driver (Advanced)**" and click **Next**.
6. Make sure that you have selected "**Search for a better driver than the one your device is using now. (Recommended)**".
7. Select ONLY (make sure the other boxes do not have a tick inside them) "**Specify a location:**", and navigate (Browse...) to **D:\Drivers\LAN\WINME**.
8. Click **OK** > **Next > Next**.
9. Click **Finish** and **Yes** to restart your computer.
10. The network adapter is now ready for configuration.

Video (WinME)

1. Click **Start** (menu) > **Run...**
2. Navigate (Browse..) to **D:\Drivers\VIDEO\WIN98&ME\SETUP.EXE** and click **OK**.
3. To continue click **Next > Next > Next > Next**.
4. Click **Finish** to restart your computer.

TouchPad (WinME)

1. Click **Start** (menu) > **Run...**
2. Navigate (Browse..) to **D:\Drivers\TOUCHPAD\WINME\Setup.exe** and click **OK**.
3. Choose the language you prefer.
4. To continue click **Next > Next** > **Next**.
5. Click **Finish** to restart your computer.
6. You may then configure your **TouchPad** as outlined in *"TouchPad and Buttons" on page 2 - 25*.

Hot-Key (WinME)

1. Click **Start** (menu) > **Run...**
2. Navigate (Browse..) to **D:\Drivers\HOTKEY\CNK001.exe** and click **OK**.
3. Choose the language you prefer.
4. Click **Next**.
5. Click **Finish** to restart your computer.
6. You may then configure your Hot-Key buttons as outlined in *"Hot-Keys" on page 2 - 19*.

Auto Mail (WinME)

1. Click **Start** (menu) > **Run...**
2. Navigate (Browse..) to **D:\Drivers\Automail\setup.exe** and click **OK**.
3. To continue click **Next** > **Next**.
4. Click **Finish** to complete the setup.
5. You may run and configure the program from the **Start** (menu). Point to **Programs** and click **Auto Mail Checker**.
6. You may then access the program settings through the icon in the **taskbar**. For further details see *"Auto Mail Checker" on page 2 - 9*.

Windows 2000 Professional

This section covers driver and utility installation instructions for *Windows 2000 Professional (**with Service Pack 2 installed**)*.

Audio (Win2000)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\AUDIO\Setup.exe** and click **OK**.
3. To continue click **Next**.
4. Click **Finish** to restart your computer.
5. Go to the **Sounds and Multimedia Control Panel** (**Start** Menu and point to **Settings** and click **Control Panel** then double-click the **Sounds and Multimedia** icon).
6. Click the **Audio** tab.
7. Click **Advanced** in the **Sound Playback** Menu.
8. Under **Speaker Setup** select **5.1 Surround Speakers** from the pull-down menu and click **OK > OK** to close.
9. You will see the **Sound Manager** appear in the **Task Bar** alongside the date, and the **AV Rack** control panel should be visible on the desktop.

Modem (Win2000)

1. Click **Start** (menu), point to **Settings** and click **Control Panel**. Double-click **System** (icon) and then click **Hardware** (tab) > **Device Manager** (button).
2. Click "+" next to **Other devices** (if its sub-items are not shown).
3. Double-click **PCI Device** and click **Reinstall Driver** (button).
4. When the *Upgrade Device Driver Wizard* appears, click **Next**.
5. When *Install Hardware Device Drivers* appears, select "**Search for a suitable driver for my device (recommended)**" and click **Next**.
6. When *Locate Driver Files* appears, select ONLY "**Specify a location"** and click **Next**.
7. Navigate (**Browse...**) to **D:\Drivers\Modem\WIN2000** and select the visible file by clicking it.
8. Click **Open** (button) and click **OK** (button), then click **Next** (click **Yes** if asked if you want to continue at any time).
9. Click **Finish**, and close the **Modem Properties** window.
10. The modem is ready for dial-up configuration.

Modem Country Selection

Be sure to check if the modem country selection is appropriate for you (**Control Panel** > **Phone and Modem Options**).

LAN (Win2000)

1. Click **Start** (menu), point to **Settings** and click **Control Panel**. Double-click **System** (icon) and then click **Hardware** (tab) > **Device Manager** (button).
2. Click "+" next to **Network Adapters** (if its sub items are not shown).
3. Double-click **Realtek RTL8139(A)-based PCI Fast Ethernet Adapter** and click **Driver** (tab).
4. Click **Update Driver** (button).
5. When the *Upgrade Device Driver Wizard* appears, click **Next**.
6. When *Install Hardware Device Drivers* appears, select "**Search for a suitable driver for my device (recommended)**" and click **Next**.
7. When *Locate Driver Files* appears, select ONLY "**Specify a location"** and click **Next**.
8. Navigate (**Browse...**) to **D:\Drivers\LAN\WIN2000** and select the visible file by clicking it.
9. Click **Open** (button) and click **OK** (button), then click **Next.**
10. Click **Finish** and close the open windows.
11. The network adapter is now ready for configuration.

Video (Win2000)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\VIDEO\WIN2K&XP\SETUP.EXE** and click **OK**.
3. To continue click **Next > Next > Next > Next**.
4. Click **Finish** to restart your computer.

TouchPad (Win2000)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\TOUCHPAD\WIN2000\Setup.exe** and click **OK**.
3. Choose the language you prefer.
4. To continue click **Next > Next** > **Next** (click **Yes** if asked if you want to continue at any time).
5. Click **Finish** to restart your computer.
6. You may then configure your **TouchPad** as outlined in *"TouchPad and Buttons" on page 2 - 25*.

Hot-Key (Win2000)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\HOTKEY\CNK001.exe** and click **OK**.
3. Choose the language you prefer.
4. Click **Next**.
5. Click **Finish** to restart your computer.
6. You may then configure your Hot-Key buttons as outlined in *"Hot-Keys" on page 2 - 19*.

Auto Mail (Win2000)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\Automail\setup.exe** and click **OK**.
3. To continue click **Next** > **Next**.
4. Click **Finish** when the *Setup Complete* box appears.
5. You may run and configure the program from the **Start** (menu). Point to **Programs** and click **Auto Mail Checker**.
6. You may then access the program settings through the icon in the **taskbar**. For further details see *"Auto Mail Checker" on page 2 - 9*.

Windows XP

This section covers driver and utility installation instructions for *Windows XP*.

Audio (WinXP)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\AUDIO\Setup.exe**.and click **OK**.
3. To continue click **Next**.
4. Click **Finish** to restart your computer.
5. Go to the **Sounds & Audio Devices** control panel (**Start** Menu and point to **Settings** and click **Control Panel** then double-click the **Sounds & Audio Devices** icon).

Note: If you are in the **Category View** choose **Sounds, Speech, and Audio Devices > Sounds and Audio Devices**.

6. Click the **Audio** tab.
7. Click **Advanced** in the **Sound Playback** Menu.
8. Under **Speaker Setup** select **5.1 Surround Speakers** from the pull-down menu and click **OK > OK** to close.
9. You will see the **Sound Manager** appear in the **Task Bar** alongside the date, and the **AV Rack** control panel should be visible on the desktop.

Modem (WinXP)

1. If you can see the **My Computer** icon on your desktop (if you cannot see the **My Computer** icon go to **step 2**)click on it once to select it, then right-click it to make the sub-menu appear and scroll down to **Properties** and click on it (go to **step 3**).
2. If you cannot see the **My Computer** icon the click **Start** (menu), then point to (but don't click just highlight it) **My Computer.** Right-click it to make the sub-menu appear and scroll down to **Properties** and click on it (go to **step 3**).
3. Click the **Hardware** (tab), then click **Device Manager** (button).
4. Click "+" next to **Other Devices** (if its sub-items are not shown).
5. Double-click **PCI Modem** and click **Reinstall Driver** (button).
6. When the *Hardware Update Wizard* appears, click **"Install from a list or specific location (Advanced)"** then click **Next**.
7. Select **"Search for the best driver in these locations:"** and select ONLY **"Include this location in the search:"**.
8. Navigate (**Browse**...) to **D:\Drivers\Modem\WINXP** and click **OK** (button), then click **Next** (click **Continue Anyway** if asked if you want to continue at any time).
9. Click **Finish** and close the open windows.
10. Your modem is now ready for dial-up configuration.

Modem Country Selection

Be sure to check if the modem country selection is appropriate for you (**Control Panel** > **Phone and Modem Options**).

LAN (WinXP)

1. If you can see the **My Computer** icon on your desktop (if you cannot see the **My Computer** icon go to **step 2**)click on it once to select it, then right-click it to make the sub-menu appear and scroll down to **Properties** (go to **step 3**) and click on it.
2. If you cannot see the **My Computer** icon click **Start** (menu), then point to (but don't click just highlight it) **My Computer.** Right-click it to make the sub-menu appear and scroll down to **Properties** (go to **step 3**) and click on it.
3. Click the **Hardware** (tab), then click **Device Manager** (button).
4. Click "+" next to **Network Adapters** (if its sub items are not shown).
5. Double-click **Realtek RTL8139 Family PCI Fast Ethernet NIC** and click **Driver** (tab).
6. Click **Update Driver** (button).
7. When the *Hardware Update Wizard* appears, click **"Install from a list or specific location (Advanced)"**, then click **Next**.
8. Select **"Search for the best driver in these locations:"** and select ONLY **"Include this location in the search:"**.
9. Navigate (**Browse...**) to **D:\Drivers\LAN\WINXP** and click **OK** (button), then click **Next.**
10. Click **Finish** and close the open windows.
11. The network adapter is now ready for configuration.

Video (WinXP)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\VIDEO\WIN2K&XP\SETUP.EXE** and click **OK**.
3. To continue click **Next > Next > Next > Next**.
4. Click **Finish** to restart your computer.

TouchPad (WinXP)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\TOUCHPAD\WINXP\Setup.exe** and click **OK**.
3. Choose the language you prefer.
4. To continue click **Next > Next** > **Next** (click **Continue Anyway** if asked if you want to continue at any time).
5. Click **Finish** to restart your computer.
6. You may then configure your **TouchPad** as outlined in *"TouchPad and Buttons" on page 2 - 25*.

Hot-Key (WinXP)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\HOTKEY\CNK001.exe** and click **OK**.
3. Choose the language you prefer.
4. Click **Next**.
5. Click **Finish** to restart your computer.
6. You may then configure your Hot-Key Buttons as outlined in *"Hot-Keys" on page 2 - 19*.

Auto Mail (WinXP)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\Automail\setup.exe** and click **OK**.
3. To continue click **Next** > **Next**.
4. Click **Finish** to restart your computer.
5. You may run and configure the program from the **Start** (menu). Point to **Programs** and click **Auto Mail Checker**.
6. You may then access the program settings through the icon in the **taskbar**. For further details see *"Auto Mail Checker" on page 2 - 9*.

Chapter 5: BIOS Utilities

Overview

This chapter gives a brief introduction to the computer's built-in software:

Diagnostics: the *POST* (Power-On Self Test)

Configuration:the *Setup* utility
If your computer has never been set up, or you are making important changes to the system (e.g. hard disk setup), then you should review this chapter first and note the original settings found in *Setup*. Even if you are a beginner, keep a record of the settings you find and any changes you make. This information could be useful if your system ever needs servicing.

There is one general rule: ***Don't make any changes unless you are sure of what you are doing***. Many of the settings are required by the system, and changing them could cause it to become unstable or worse. If you have any doubts, consult your service representative.

BIOS Settings Warning

Incorrect settings can cause your system to malfunction. To correct mistakes, return to Setup and restore the Setup Defaults with **<F9>**.

Important BIOS Settings

Generally speaking you should not have to adjust any of the BIOS settings as they will already be set for your computer. However the following is a quick reference to the most important settings you may need to change at some point.

Table 5 - 1
Important Bios Settings

Option	Page #	Purpose
Installed O/S	*5 - 11*	Tells the computer which Operating System you have installed (WinMe, Win2K, WinXP = **ACPI OS**). If you are using **Windows 98SE** make sure you change the setting to **[Win98]**.
Embedded Share Memory	*5 - 11*	Specify's the amount of total memory to be allocated to video memory.
TV System	*5 - 12*	This item allows you to switch between NTSC and PAL TV systems when connecting a TV to the S-Video port.
Boot Order	*5 - 16*	Specify's the order of the devices on which the computer searches for an Operating System as it starts up.

The Power-On Self Test (POST)

Each time you turn on the computer, the system takes a few seconds to conduct a POST, including a quick test of the on-board RAM.

As the POST proceeds, the computer will tell you if there is anything wrong. If there is a problem which prevents the system from booting, it will display a system summary and prompt you to run Setup.

If there are no problems, the **Setup** prompt will disappear and the system will load the operating system. Once that starts, you can't get into **Setup** without rebooting.

POST Screen

Post Screen

1.BIOS information
2.CPU type
3.Memory status
4.HDD identification notice
5.Enter Setup prompt appears only during POST

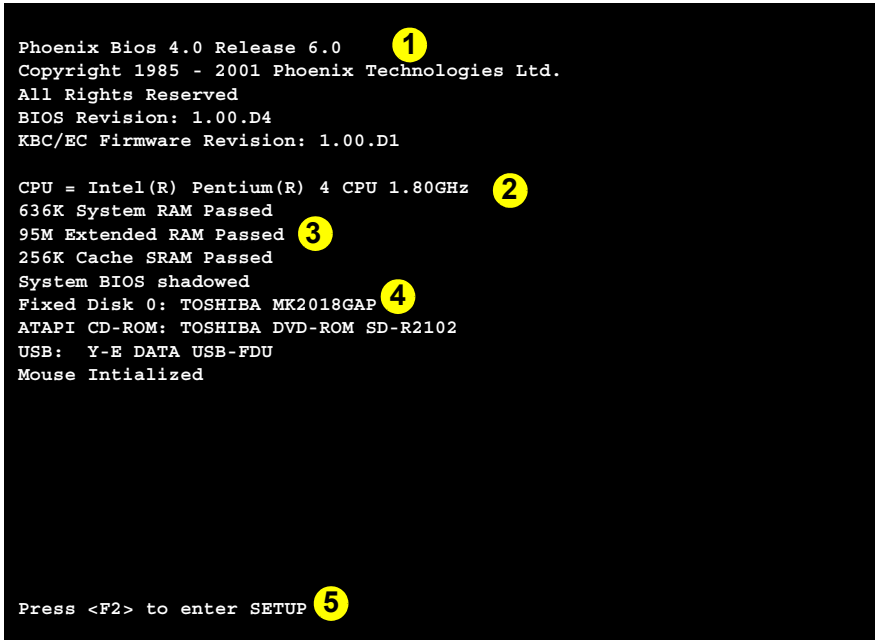


Figure 5 - 1
Post Screen

Failing the POST

Errors can be detected during the POST. There are two categories, “fatal” and “non-fatal”.

Fatal Errors

These stop the boot process and usually indicate there is something seriously wrong with your system. Take the computer to your service representative or authorized service center as soon as possible.

Non-Fatal Errors

This kind of error still allows you to boot. You will get a message identifying the problem (make a note of this message!) followed by the prompt:

- Press <F1> to resume
- <F2> to enter Setup

Press **F1** to see if the boot process can continue. It may work, without the correct configuration.

Press **F2** to run the Setup program and try to correct the problem. If you still get an error message after you change the setting, or if the “cure” seems even worse, call for help.

QuickBoot Mode

If you choose the **QuickBoot Mode** (not available for all models) in the Setup utility, you will only see an abbreviated version of this screen (***“Advanced Menu” on page 5 - 10***).

Boot Agent

Press and hold **Shift F10** to enter the Boot Menu immediately after you start the system.

Use ↑&↓ to highlight your preference and press <Space> to change the value (see *"Boot Menu" on page 5 - 16*).

Press <F4> to save and quit, or press <Esc> to quit without saving.

Choosing the Boot Device Before OS Startup

The system supports booting from FDD, HDD, CD or LAN. When there is a need, you can ignore the boot sequence preset in the Boot Menu option and choose to directly boot from the device you need by following the instructions in the sidebar.

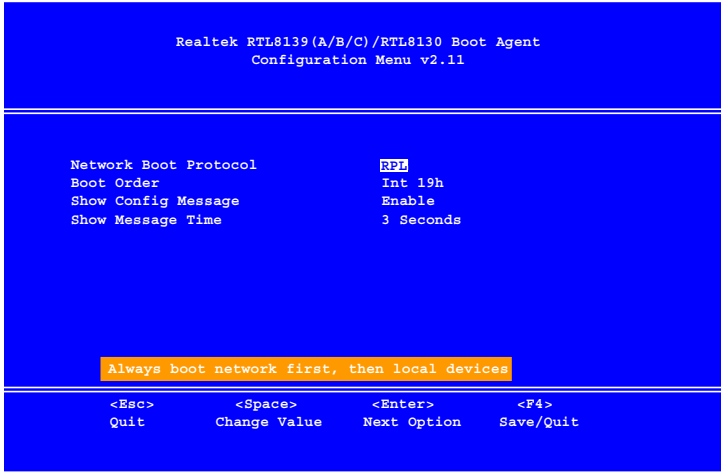


Figure 5 - 2
Boot Agent Menu

The Setup Program

The **Phoenix Setup** program tells the system how to configure itself and manage basic features and subsystems (e.g. port configuration).

Entering Setup

To enter *Setup*, turn on the computer and press **F2** during the **POST**. The prompt (**"Press F2 to Enter Setup"**) seen in *Figure 5 - 1* is usually present for a few seconds after you turn on the system. If you get a "Keyboard Error" (usually because you pressed **F2** too quickly) just press **F2** again.

If the computer is already on, reboot using the **Ctrl** + **Alt** + **Delete** combination and then hold down **F2** when prompted. *Setup's* main menu will appear.

Setup Screens

The following pages contain additional advice on **portions** of the *Setup*. The *Setup* interface looks like a "windows" screen:

Along the top of the screen is a menu bar with five (**5**) menu headings. When you select a heading, a new screen appears. Scroll through the features listed on each screen to make changes to Setup.

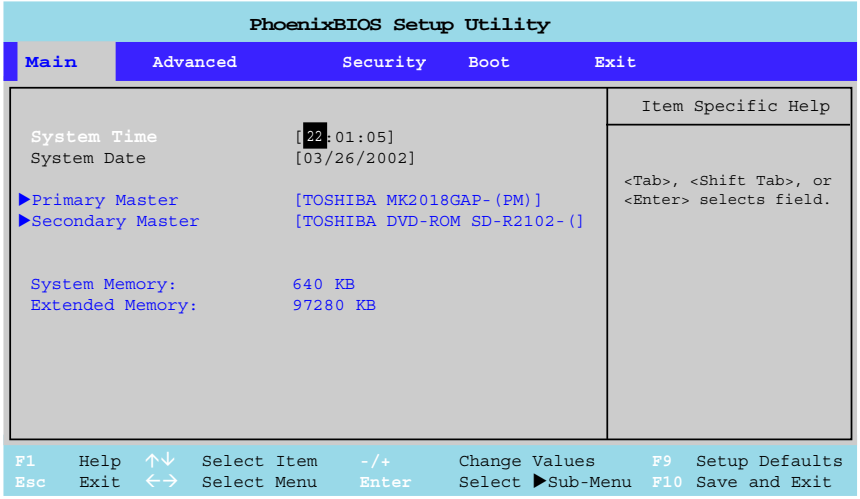
Setup Screens

Instructions on how to navigate each screen are in the box at the bottom of the screen. For help, press **F1** to call up a General Help screen, and use the arrow keys to scroll up or down the page.

The "**Item Specific Help**" on the right side of each screen explains the highlighted item and its options. If you see an arrow (▶) next to an item, press **Enter** to go to a sub-menu on that subject. The sub-menu screen which appears has a similar layout but the Enter key may execute a command.

Main Menu

Figure 5 - 3
Main Menu



System Time & Date (Main Menu)
The hour setting uses the 24-hour system (i.e., ØØ = midnight; 13 = 1 pm). If you can change the date and time settings in your operating system, you will also change these settings. Some applications may also alter data files to reflect these changes.

Primary Master (Main Menu)
Pressing **Enter** under opens the sub-menu to show the configuration of the HDD which fits into the computer's HDD bay. These items are configured automatically for you.

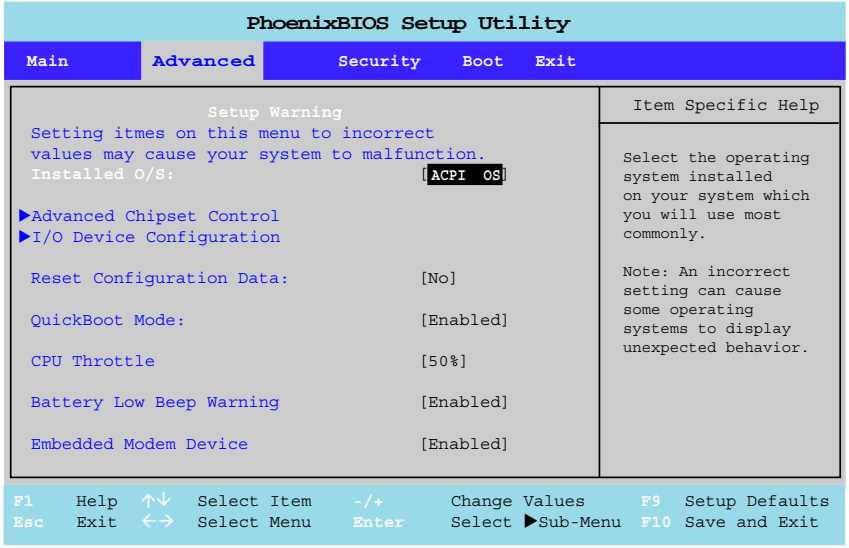
Secondary Master (Main Menu)
Pressing **Enter** under opens the sub-menu to show the configuration of the CD device bay. These items are configured automatically for you.

Switching Hard Disks

Every time you install a different hard disk in the computer, it will be (re)configured automatically.

Advanced Menu

Figure 5 - 4
Advanced Menu


PhoenixBIOS Setup Utility
Main
Advanced
Security
Boot
Exit
Setup Warning
Setting itmes on this menu to incorrect values may cause your system to malfunction.
Installed O/S: [ACPI OS]
▶Advanced Chipset Control
▶I/O Device Configuration
Reset Configuration Data: [No]
QuickBoot Mode: [Enabled]
CPU Throttle [50%]
Battery Low Beep Warning [Enabled]
Embedded Modem Device [Enabled]
Item Specific Help
Select the operating system installed on your system which you will use most commonly.
Note: An incorrect setting can cause some operating systems to display unexpected behavior.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ←→ Select Menu Enter Select ▶Sub-Menu F10 Save and Exit

Installed O/S: (Advanced Menu)
This item tells the computer what kind operating system you're using: *Windows ME*, *Windows 2000*, *Windows XP* are designated as **ACPI OS's**. **If you are using Windows 98SE make sure you change the setting to [Win98]**.

Embedded Share Memory (Advanced Menu>Advanced Chipset Control)
This item tells the computer how much system memory can be shared to become available as video memory. By default, the video memory is set to 32MB. You may also set it to 16MB or 64MB (maximum). Bear in mind that the more overall memory is used as video memory, the less is available as system memory. This memory is allocated from your system memory e.g. if you computer has 128MB of memory (RAM), then 32MB will be allocated to video leaving the system with 96MB of RAM.

Graphics Aperture (Advanced Menu>Advanced Chipset Control)
The AGP aperture is an area of system RAM reserved for use by the AGP card for storing textures if it needs to. The RAM is available for use by the system as normal if not used by the graphics card. The recommended setting is **64MB**, and this is the default setting. This setting should not be set lower than **32MB**.

TV System (Advanced Menu>Advanced Chipset Control)
This item allows you to switch between NTSC and PAL TV systems when connecting a TV to the S-Video port.

TV Scan MODE (Advanced Menu>Advanced Chipset Control)
This item allows you to change the TV Scan Line Mode Option for a TV connected to the S-Video port (check your TV manual if you are unsure of the setting).

I/O Device Configuration (Advanced Menu)
The sub-menus under this line include options to configure the P**arallel (Printer) port** and **Serial Port B (Infrared)**. These can be left to the default settings, however you may wish to use certain devices (e.g. a printer) which require settings to be adjusted accordingly. Check the documentation for any such devices to see what settings are required.

Reset Configuration Data (Advanced Menu)
This item should be set to "**No**" as default. You can change the setting to "**Yes**" if you have installed a new add-on which has reconfigured the system, resulting in such a serious system conflict that the operating system is unable to boot.

QuickBoot Mode: (Advanced Menu)
If enabled the system will skip certain tests as it starts up, thus decreasing the time to boot up.

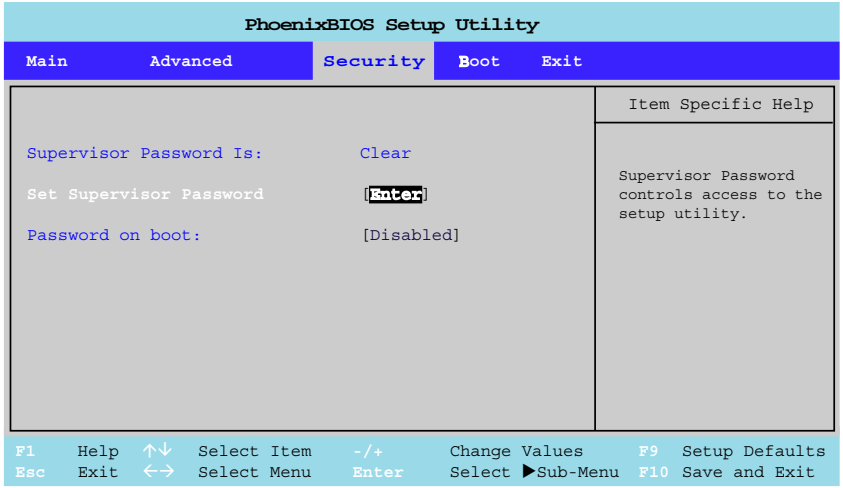
CPU Throttle (Advanced Menu)
If you are running off the internal battery power, without the AC adapter plugged in, this function can be enabled to increase the battery life by setting the CPU clock to run only part of the time (you can set the percentage of time the clock will run).

Battery Low Beep (Advanced Menu)
Choose "Enabled" to set the audible warning when your PC battery is low.

Embedded Modem Device (Advanced Menu)
This item allows you to disable the modem device, should you need to do so.

Security Menu

Figure 5 - 5
Security Menu



Security Menu
The changes you make here affect the access to the *Setup* utility itself, and also access to your machine as it boots up after you turn it on. These settings do not affect your machine or network passwords which will be set in your software OS.

Set Supervisor Password: (Security Menu)
Set a password for access to the *Setup* utility (this will not affect access to the computer OS, only the *Setup* utility).

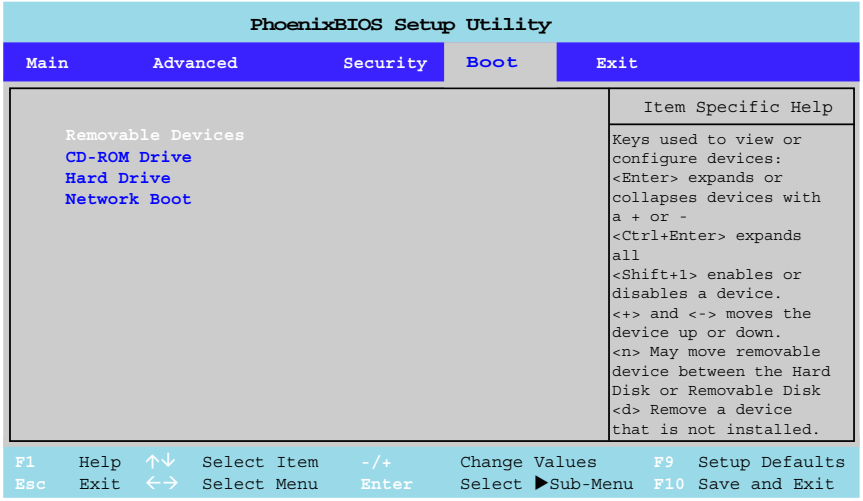
Password on boot: (Security Menu)
Choose *Enabled* to set a password (the supervisor password as set above) for booting the computer. Only users who enter a correct password can boot the system (**see "Warning" in the sidebar**).

Password Warning

If you choose to set a boot password, **NEVER** forget your password.
The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.

Boot Menu

Figure 5 - 6
Boot Menu


PhoenixBIOS Setup Utility
Main
Advanced
Security
Boot
Exit
Item Specific Help
Removable Devices
CD-ROM Drive
Hard Drive
Network Boot
Keys used to view or configure devices:
<Enter> expands or collapses devices with a + or -
<Ctrl+Enter> expands all
<Shift+1> enables or disables a device.
<+> and <-> moves the device up or down.
<n> May move removable device between the Hard Disk or Removable Disk
<d> Remove a device that is not installed.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ←→ Select Menu Enter Select ▶Sub-Menu F10 Save and Exit

Boot Menu

When you turn the computer on it will look for an operating system (e.g *Windows 2000*) from the devices listed in this menu, and **in this order**. If it cannot find the operating system on that device, it will try to load it from the next device in the order specified in the Boot Menu.

Boot devices usually are hard drives, floppy drives, CD-ROM's and LAN.

When you specify a device as a boot device on the Boot Menu, it requires the availability of an operating system on that device. Most home computers come with an operating system already installed on hard-drive **C**:

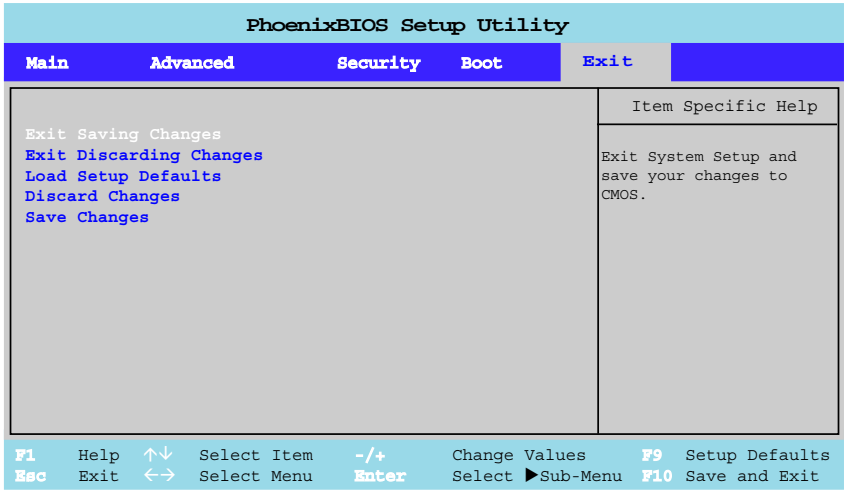
If you wish to boot from a CD-ROM you will need to add it to the boot order. As a general rule the order below is recommended:

1. Removable Devices (usually floppy disks)
2. CD-ROM Drive
3. Hard Drive
4. Network Boot

In everyday use you will usually boot from the hard drive, however there may be occasions when it is advantageous to boot from a floppy disk or CD-ROM.

Exit Menu

Figure 5 - 7
Exit Menu



Exit Menu

Choosing to “Discard Changes” or “Exit Discarding Changes” will wipe out any changes you have made to the Setup. You can also choose to restore the original “Setup Defaults” which will return the Setup to its original state and erase any previous changes you have made in a previous session.

Chapter 6: Upgrading The Computer

Overview

This chapter contains the information on upgrading the computer. Follow the steps outlined to make the desired upgrades. If you have any trouble or problems you can contact your service representative for further help. Before you begin you will need:

- A small crosshead or Phillips screwdriver
- A small regular screw driver
- An antistatic wrist strap

Before working with or repairing the internal components you will need to wear an antistatic wrist strap to ground yourself because static electricity may damage the components.

The chapter includes:

- Upgrading the CD Device
- Upgrading the Hard Disk Drive
- Upgrading the System Memory

Make sure you review each procedure before performing it.

Warranty Warning

Please check with your service representative before undertaking any upgrade procedures to find out if this will VOID your warranty.

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

When Not to Upgrade

These procedures involve opening the system's case, adding and sometimes replacing parts.

You should **not** perform any of these upgrades if:

- your system is still under warranty or a service contract
- you don't have all the necessary equipment
- you're not in the correct environment
- you doubt your abilities

Under any of these conditions, contact your service representative to purchase or replace the component(s).

Upgrading the CD Device

The interchangeable CD device installed in the bay will depend on what configuration you purchased. If you wish to change or upgrade this device follow this procedure.

1. Turn the computer **OFF**.
2. Place the computer on a clean, stable surface and turn it over.
3. Locate the release latch 1 (*Figure 6 - 1*) for the CD device.
4. Remove screw 2.

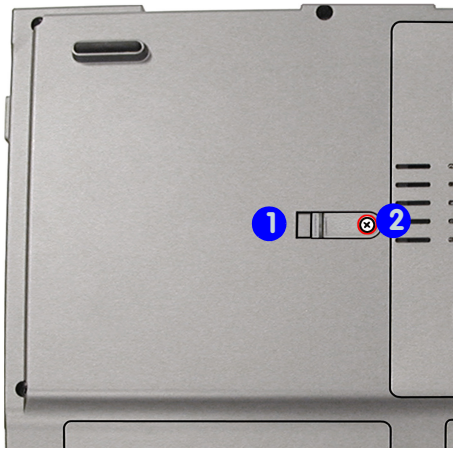
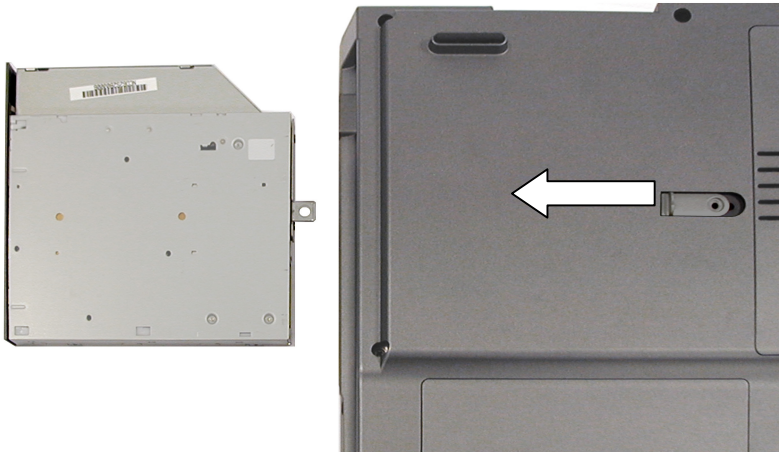


Figure 6 - 1
CD Device Release Latch Screw

5. Slide the release latch in the direction of the arrow in ***Figure 6 - 2*** and this will push the CD device out of the computer.
6. Gently push the new /replacement device into place, until the latch snaps back in to position.
7. Re-insert the screw into the latch.

Figure 6 - 2
CD Device Removed



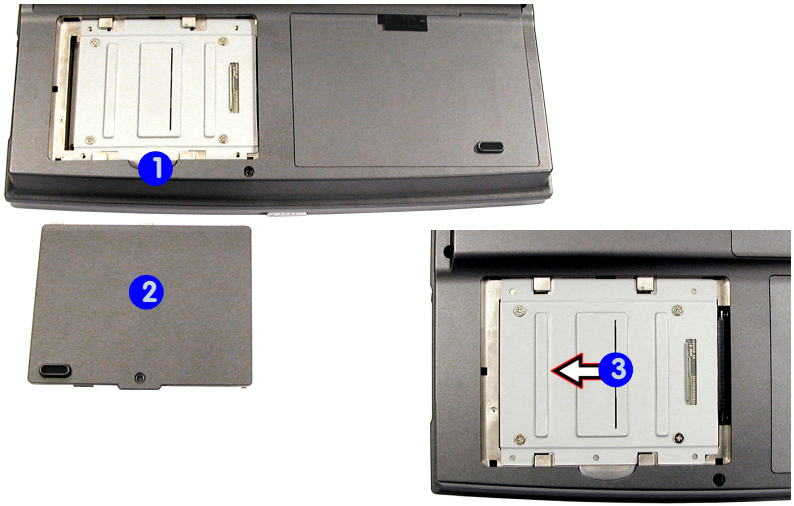
Upgrading the Hard Disk Drive

The hard disk drive is used to store your data internally in the computer. It can be taken out to accommodate other 2.5” IDE hard disk drives with a height of 9.5 mm. The system supports PIO mode 4 / ATA-33/66/100 (Ultra DMA).

Removing the Hard Disk

1. Turn the computer **OFF**.
2. Place the computer on a clean, stable surface and turn it over.
3. Remove the screw at point 1, and lift off the HDD case cover 2.
4. Slide the HDD assembly in the direction of the arrow 3 (***Figure 6 - 3***).

Figure 6 - 3
Hard Disk Case Cover Removal



5. Remove screws 1 - 4 (*Figure 6 - 4*) from the assembly, and lift the hard disk up from the case.
6. Just reverse the removal procedure to install the new HDD.

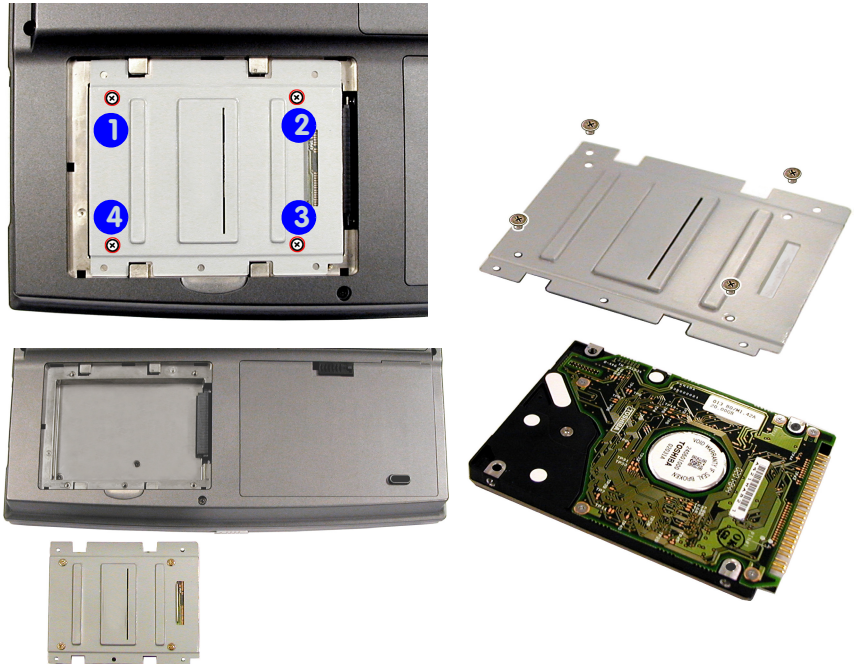


Figure 6 - 4
Hard Disk Removal

Setting Up a New HDD

Follow your operating system's installation instructions and install all necessary drivers and utilities as outlined in *"What to Install" on page 4 - 2*.

HDD System Warning

New HDDs are blank. Before you begin make sure:

You have backed up any data you want to keep from your old HDD.

You have all the CD-ROMs and FDDs required to install your operating system and programs.

If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

Upgrading the System Memory

The computer has two memory sockets for 200-pin DDR Small Outline Dual In-line Memory Modules (SO-DIMM), which are DDR266 compliant. The main memory can be expanded up to 1024MB, and accepts 128/256/512MB modules.

The total memory size is automatically detected by the POST routine once you turn on your computer.

To upgrade the memory in your notebook please perform the following steps:

- Remove the keyboard.
- Remove a memory module (if present) where necessary.
- Insert a new memory module.
- Replace the keyboard.

Removing the Keyboard

1. Turn **OFF** the computer.
2. Push in the **three** keyboard latches at the top of the keyboard to elevate the keyboard from its normal position as in ***Figure 6 - 5*** (you may need to use a small screwdriver, or paper clip, to do this).

Figure 6 - 5
Keyboard Latches

3. Carefully lift the keyboard up and out, being careful not to bend the keyboard ribbon cable 1 (*Figure 6 - 6*).
4. Remove screws 2 - 9 (*Figure 6 - 6*) from the shielding plate, and lift the plate up off the computer.

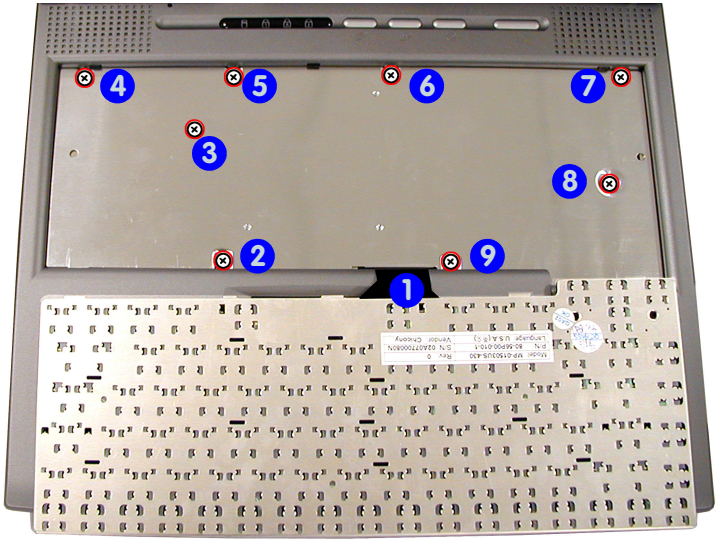


Figure 6 - 6
Shielding Plate Screws

Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

5. Locate the Memory sockets 1 and 2 (*Figure 6 - 7*).

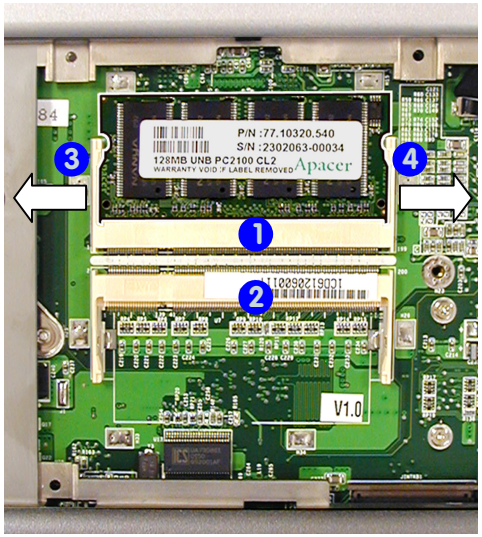


Figure 6 - 7
Memory Sockets

6. If there is a module currently installed which needs to be upgraded/replaced then remove it.
7. Gently pull the latches 3 and 4 on the memory socket toward the sides of the computer, as indicated in *Figure 6 - 7*.

8. The module 1 (*Figure 6 - 8*) will pop-up, and you can remove it.
9. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.

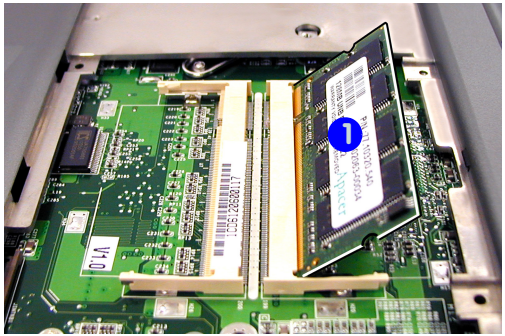


Figure 6 - 8
Memory Removal

10. The module will only fit one way as defined by its pin alignment. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE IT; it should fit without much pressure.
11. Press the module down towards the mainboard until the slot levers click into place to secure the module.

Warranty

The CPU is not a user serviceable part. Opening the CPU compartment, or accessing the CPU in any way, may violate your warranty.

Unauthorized tampering with the HDD may also violate your warranty.

12. Replace the shielding plate and the **eight** screws (see *Figure 6 - 6 on page 6-11*).
13. Replace the keyboard by insuring the **five** tabs at the base of the keyboard fit into place (you will find these under the Fn, Spacebar (2), Ctrl and arrow keys - see *Figure 6 - 9*).

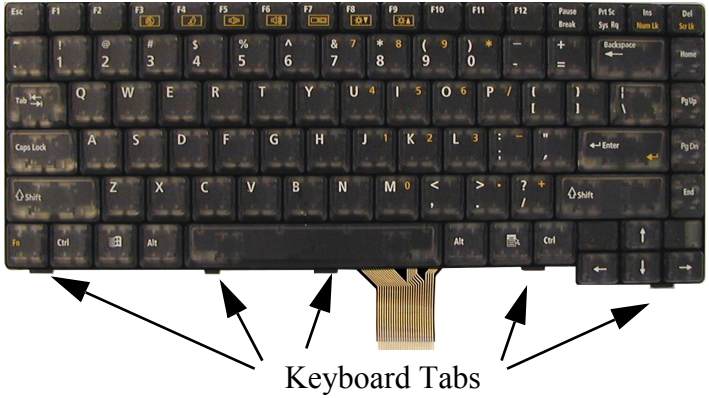


Figure 6 - 9
Keyboard Tabs

14. Carefully press the front of the keyboard down so that the three latches at the front of the keyboard lock down again.
15. Restart the computer.
16. During the startup process, the BIOS will register the new memory configuration.

Chapter 7: Troubleshooting

Overview

Should you have any problems with your computer, before consulting the service center, you may want to try to solve the problem yourself. This chapter lists some common problems and their possible solutions. This can't anticipate every problem, but you should check here before you panic. If you don't find the answer in these pages, make sure you have followed the instructions carefully and observed the safety precautions in the preface. If all else fails, talk to your service center. You should also make a record of what happened and what remedies you tried.

Of course, if something goes wrong, it will happen at the most inconvenient time possible, so you should preview this section just in case. If, after you've tried everything, and the system still won't cooperate, try turning it off for a few minutes and then rebooting. You will lose any unsaved data, but it may start working again. Then call your service representative.

Basic Hints and Tips

Many of the following may seem obvious but they are often the solution to a problem when your computer appears not to be working.

•***Power:***	Is the computer actually plugged into a working electrical outlet? If plugged into a **power strip**, make sure it is actually working.
•***Connections:***	Check all the **cables** to make sure that there are no **loose connections** anywhere.
•***Power Savings:***	Make sure that the system is not in **Hibernate** or **Standby** mode by pressing the power button for less than 4 seconds (the LED will flash green while in **Standby** mode, in Hibernate mode it will be orange).
•***Connections:***	Check the brightness of the screen by pressing the **Fn + F8 or F9** keys to adjust the brightness (see ***"Opening the LCD" on page 3 - 2***).

•***Display Choice:*** Press **Fn** + **F7** to make sure the system is not set to "external only" display (see ***"Switching/ Enabling Displays (Keyboard Toggle)" on page 3 - 11***).

•***Boot Drive:*** Make sure there are no **floppy disks** in the drive when you start up your machine (this is a common cause of the message "***Invalid system disk - Replace the disk, and then press any key***").

Backup and General Maintenance

- Always **backup** your important data, and keep copies of your *OS* and programs safe, but close to hand. Don't forget to note the ***serial numbers*** if you are storing them out of their original cases e.g. in a CD wallet.

- Run **maintenance programs** on your hard disk and *OS* as often as you can. You may schedule these programs to run at times when you are not using your computer. You can use those which are provided free with your *OS,* or buy the more powerful dedicated programs to do so.

- Write down your passwords and keep them safe (away from your computer). This is especially important if you choose to use a **Startup** password for the *BIOS* (see ***"Security Menu" on page 5 - 14***).

- Keep copies of vital **settings files** such as network, dialup settings, mail settings etc. (even if just brief notes).

Viruses

- Install an **Anti-Virus** program and keep the **definitions file** (the file which tells your program which viruses to look for) up to date. New computer viruses are discovered daily, and some of them may seriously harm your computer and cause you to lose data. **Anti-Virus** programs are commercially available and the **definitions file updates** are usually downloadable directly from the internet.

- Be careful when opening e-mail from sources you don't know. **Viruses** are often triggered from within **e-mail attachments** so take care when opening any attached file. You can configure most **Anti-Virus** programs to check all **e-mail attachments**. **Note**: You should also beware of files from people you know as the virus may have infected an **address book** and been automatically forwarded without the person's knowledge.

- Keep a "**Boot Floppy Disk**" (this disk provides basic information which allows you to startup your computer) handy. You may refer to your OS's documentation for instructions on how to make one, and many **Anti-Virus** programs will also provide such a disk (or at least instructions on how to make one).

Warranty

The CPU is not a user serviceable part. Opening the CPU compartment, or accessing the CPU in any way, may violate your warranty.

Unauthorized tampering with the HDD may also violate your warranty.

Upgrading and Adding New Hardware/ Software

- Do not be tempted to make changes to your ***Windows Registry*** unless you are very sure of what you are doing, otherwise you will risk severely damaging your system.
- Please don't open your computer or undertake any repair or upgrade work if you are not comfortable with what you are doing.
- Read the **documentation**. We can assume, since you are reading this, that you are looking at the computer's manual, but what about any new peripheral devices you have just purchased? Many problems are caused by the installation of new hardware and/or software. Always refer to the documentation of any new hardware and/or software, and pay particular attention to files entitled "**READ ME**" or "**READ ME FIRST**".
- When installing a new device always make sure the device is powered on, and in many cases you will need to restart the computer. Always check that all the cables are correctly connected.

- Make sure you have installed the **drivers** for any new hardware you have installed (latest **driver files** are usually available to download from vendor's websites).

- Thoroughly check any **recent changes** you made to your system as these changes may affect one or more system components, or software programs. If possible, go back and undo the change you just made and see if the problem still occurs.

- Don't over complicate things. The less you have to deal with then the easier the source of the problem may be found; ***Example*** - if your computer has many devices plugged into its ports, and a number of programs running, then it will be difficult to determine the cause of a problem. Try disconnecting all of the devices and restarting the computer with all the peripheral devices unplugged. A process of elimination (adding and removing devices and restarting where necessary) will often find the source of a problem, although this may be time consuming.

Battery Critically Low

Sleep Button

When the battery reaches a critically low power state, the system will either go into Hibernate or Standby mode dependant upon the setting of the Sleep Button (*"Suspend/Resume Keys" on page 3 - 23*).

System Resume

To get the system to resume from Standby mode (when powered by the battery) when the battery has reached a critically low power state, firstly plug-in the AC adapter.

Power

You turned on the power but it doesn't work.

possible cause: Battery missing / incorrectly installed.

indicator: If the **battery status LED** , doesn't light up, then the battery may be missing or incorrectly installed.

solution: Check the battery bay, make sure the battery is present and seated properly (the design of the battery only allows it to go in one way). Make sure there's nothing interfering with the battery contacts.

possible cause: Low battery

indicator: The **battery status LED** , is blinking orange.

solution: Plug in the AC power source. If the computer doesn't start up immediately, turn it off then on again.

possible cause:	The suspend key combination, **Fn + Suspend (F4),** or other configured key combination, has been toggled.
indicator:	The various **LED's** light up, but no picture appears.
solution:	Press **Fn + Suspend (F4),** or other configured key combination. Wait a few moments before trying this control again.

You are losing battery power too quickly.

possible cause: The battery does not fully charge because of prolonged inactivity.
indicator: The battery life per charge is too short.
solution: (see *"Battery" on page 2 - 3*)

possible cause: The battery is too hot.
indicator: The battery is warm to the touch.
solution: Allow the battery to cool. If this problem persists, make sure the vents aren't blocked and the computer isn't sitting on a thermal surface. Make sure you're using the correct adapter.

possible cause: The system is using too much power.
solution: If your *OS* has a *Power Options* scheme (see *"Enabling Power Options" on page 3 - 18*) check its settings. You may also be using a PC card device which is drawing a lot of power.

Hibernate Mode In Windows 98SE

Hibernate mode is not available in **Windows 98SE**.

The notebook feels too hot.

possible cause: The system is using too much power or is not properly ventilated.

indicator: The computer feels uncomfortably warm.

solution: Reduce the computer's power consumption. Make sure the notebook is properly ventilated and the fan port is not blocked. If this doesn't cool it down, put the system into Hibernate mode or turn it off for an hour.

The battery pack will not charge.

possible cause: The battery pack is exposed to an excessively hot or cold environment.

solution: ***1.***Place the battery in a suitable environment and after it returns to normal temperature try again.

2.The battery may be bad and may need to be replaced, contact your service center for more details.

Battery Charging

Make sure the battery is totally used up before recharging, and make sure you recharge the battery to full capacity each time you recharge.

Overheating

To prevent your computer from overheating make sure nothing blocks the vent while the computer is in use.

The battery pack will not charge and the charge indicator light is off.

possible cause: The battery is already fully charged and the indicator light is broken.

possible cause: The battery pack is exposed to an excessively hot or cold environment. Place the battery in a suitable environment and after it returns to normal temperature try again.

solution: The battery may be bad and may need to be replaced, contact your service center for more details.

A beeping sound is heard and the low-battery indicator is on.

possible cause: The battery power is nearly used up.

solution: Connect the AC adapter to your computer.

A beep isn't heard when the low-battery indicator turns on, or the gauge indicates power is less than 10%.

possible cause: The battery power is nearly used up and the volume control may be turned down.

solution: Adjust the volume control and connect the computer with the AC adapter.

Actual battery operating time is shorter than expected.

possible cause: The battery is exposed to excessively high or low temperature.

solution: Suitable operating conditions are between 5°C and 35°C.

possible cause: The battery has not been fully discharged before being recharged.

solution: Make sure the battery is fully discharged and recharge it completely before reusing.

Battery Critically Low

Sleep Button

When the battery reaches a critically low power state, the system will either go into Hibernate or Standby mode dependant upon the setting of the Sleep Button (***"Suspend/Resume Keys" on page 3 - 23***).

possible cause:	*Power Options* have been disabled.
solution:	Go to the **Control Panel** in *Windows* and re-enable the options.
possible cause:	A peripheral device or PC card is consuming a lot of power.
solution:	Turn off the unused device to save power.
possible cause:	Previously the battery was given only a partial charge.
solution:	Always fully charge the battery after it has been totally used up.

Display

Nothing appears on screen.

possible cause: The system is in a power saving mode.

indicator: The LED power indicator, , is blinking green.

solution: Toggle the suspend key combination, **Fn + F4 Suspend** (see *"Function Keys" on page 2 - 22*).

possible cause: The screen controls need to be adjusted.

solution: Toggle the screen control key combinations **Fn + F8** and **F9** (see *"Opening the LCD" on page 3 - 2*). If you're connected to an external monitor, make sure it's plugged in and turned on. You should also check the monitor's own brightness and contrast controls.

possible cause: The computer is set for a different display.

solution: Toggle the screen display key combination, **Fn** + **F7**. (see ***"Switching/Enabling Displays (Keyboard Toggle)" on page 3 - 11***). If an external monitor is connected, turn it on.

possible cause: The **screen saver** is activated.

solution: Press any key or touch the **TouchPad** to return to your display.

The screen is flickering.

possible cause: The vertical refresh rate is insufficient on your external monitor.

solution: ***1.*** Avoid using the Simultaneous display mode. Use LCD only or CRT only.

2. Switch to a lower resolution and/or fewer colors.

3. Adjust the refresh frequency in the display controls (see ***"Vertical Refresh Rate" on page 3 - 14***).

The screen images aren't clear.

possible cause: The screen controls need to be adjusted.
solution: Toggle the screen control key combinations **Fn** + **F8** and **F9** (see *"Opening the LCD" on page 3 - 2*).

possible cause: The viewing angle of the LCD is bad.
indicator: The screen appears shiny or too dim.
solution: Adjust the position of the LCD. LCD's are designed to be viewed "straight on". If the angle is wrong, you may see glare from the screen's backlight.

possible cause: The screen is dirty.
indicator: The screen images are blurry.
solution: Clean the screen using a soft, clean **dry** cloth. Many cleaning solutions can damage the LCD surface so you should follow the precautions outlined in the *Preface*. Try to avoid touching the screen itself. Even the cleanest hands can leave oils which attract contaminants.

possible cause:	The screen is suffering from **burn-in**.
indicator:	The screen has ghost images, even when it's off.
solution:	This problem is usually associated with external CRT monitors. Use power saving options (see ***"Monitor Standby" on page 3 - 19***) to turn off the LCD. You can also use a **screen-saver** which can help protect an attached monitor.

Hard Disk Drive (HDD)

The computer takes longer during Startup.

possible cause: Data saved on the hard disk drive may be lost or damaged.

solution: Please operate the scan disk or disk defragmenter to check for any lost or damaged data.

possible cause: The computer is waking up from **Hibernate** mode.

Boot Password

You forget the boot password.

solution: If you forget the password, you may have to discharge the battery of the *CMOS*. Contact your service representative for help.

Password Warning

If you choose to set a boot password, **NEVER** forget your password.
The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.

Win98SE Installation Warning

Win98SE installation usually requires you to start your system from a floppy disk, then browse to the CD to run setup.exe program. After the system has started up from the floppy disk, please **disconnect the USB floppy drive** before browsing to the CD drive to install the Win98 software. This will avoid a "system hang".

Floppy Disk Drive (FDD)

The floppy disk drive will not write data to disk.

possible cause: The floppy disk is not formatted.

solution: Format the disk (you may do this by right-clicking the disk icon in *My Computer* in *Windows* and choosing **Format** from the menu). Please remember that this will **erase all data** contained on the floppy disk.

Note: Floppy disks were never intended for long-term data storage, and have a finite lifespan. **Do not** store important files you wish to keep for a long time on floppy disks. As a general rule it is worth reformatting floppy disks regularly.

possible cause: The floppy disk is write-protected.

solution: Undo the protection by moving the write-protect tab on the disk down until it clicks.

possible cause: There is not enough unused space available on the disk.

solution: Use a new disk or delete any unneeded data.

The message *"Invalid system disk - Replace the disk, and then press any key"* appears.

possible cause: The computer is trying to boot from an incorrect floppy disk.

solution: Remove the floppy and insert a correct one, or boot from your hard disk or CD. You will need to restart the computer.

Media Warning

Don't try to remove a floppy disk while the system is accessing it. This may cause the system to "crash".

Audio

The sound cannot be heard or the volume is very low.

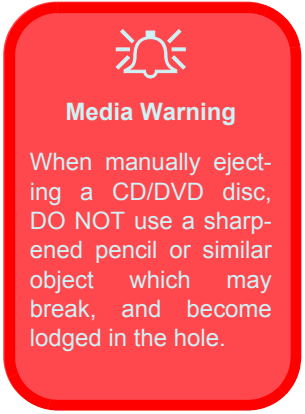
possible cause: The volume might be set too low.

solution: ***1.***Check the volume control in the ***Sound Control Panel*** in the *Windows* Toolbar.

2.The headphone is plugged into the wrong jack. It should be plugged into the Headphone-Out jack (see ***"Headphone-Out Jack" on page 1 - 17***).

Sound Volume Adjustment

How high the sound volume can be set depends on the setting of the volume control within *Windows*. Click the **Speaker** icon on the taskbar to check the setting.


Media Warning
When manually ejecting a CD/DVD disc, DO NOT use a sharpened pencil or similar object which may break, and become lodged in the hole.

CD Device

The compact disc cannot be read.

possible cause: The compact disc is dirty.

solution: Clean it with a CD-ROM cleaner kit.

The compact disc tray will not open when there is a disc in the tray.

possible cause: The compact disc is not correctly placed in the tray.

solution: Gently try to remove the disc using the eject hole (see *"Loading Discs" on page 2 - 14*).

I can no longer change region codes any more using the DVD utility.

possible cause: You have already changed the code the maximum **5** times.

solution: See *"DVD Regional Codes" on page 2 - 16*.

A music compact disc can be read while a data disc can not.

possible cause: There may be a problem with the disc hardware or software.

solution: Refer to your operating system manual for more information on the software and make sure you have the correct software installed for running video compact discs/DVDs. If the proper software is properly installed and a problem still exists, contact your service representative about a possible hardware problem.

Multiple Display Modes & DVD Playback

In **Mirror** mode DVD movies must be displayed in the **primary** device - **see *"Switching/Enabling Displays (Driver Controls)" on page 3 - 12***. DVD playback is not supported in **Multi-monitor** mode.

All compact discs cannot be read.

possible cause: The *Windows* system does not recognize the CD-ROM drive, or the CD-ROM drive is not compatible with other devices.

solution: ***1.*** Make sure you have the CD-ROM drive properly installed and configured.

2. The CD-ROM drive is dirty. Clean it with a CD-ROM cleaner kit.

3. There may be a problem with the disc hardware or software. Refer to your operating system manual for more information on the software, and make sure you have the proper software installed for using compact discs. If the correct software is properly installed, contact your service center about a hardware problem.

PC Card

The system cannot recognize the PC card.

possible cause:	The PC card is not inserted into the socket or inserted incorrectly.
solution:	Remove the card and reinsert it aligning the PC card with the slot. Push the card in until it locks into place.
possible cause:	The PC card driver is not installed.
indicator:	The system cannot access the card after it is installed.
solution:	Please read the documentation which comes with any new external device, and make sure you **install the driver** for it as this will allow you to access any extra functions which come with your device.
possible cause:	The PC card or card driver is not compatible with the computer's OS.
solution:	See ***Appendix A:"PC Card (Model A Only)" on page A-4*** to check the compatibility of your card.

The PC Card Problem in Windows 98

After installation of *Windows 98* or *Windows 98 Second Edition*, you may find that the PC cards are not working normally and you may also notice one or more of the following:

- An exclamation mark appears in the PC card driver in **Device Manager**
- PC cards don't work at all
- PC card controllers are not enumerated
- PC card controllers are disabled on power-up
- PC card controllers are disabled when you resume the computer from Suspend mode

This is a problem caused by *Microsoft Windows 98 (Second Edition)*. To resolve the problem, install the program file **PCI.vxd** to update your system driver.

For more information on this, refer to the Microsoft article "CardBus Device Not Enumerated with TI 14xx or 44xx CardBus Controllers" (Article ID Q233017) which can be found on Microsoft's web site.

The PC Card Problem in Windows Me

After you resume your computer from suspend mode and try to use a program that uses a PCMCIA modem, the *Windows* message server (Msgsrv32.exe) may stop responding (hang). *Windows*-based programs or *Windows* itself may then hang. This problem can occur when you are using Dial-Up Networking to connect to an Internet service provider and your computer enters Suspend mode or Standby mode before you disconnect the Dial-Up Networking connection.

This is a problem caused by *Microsoft Windows Me (Millennium Edition)*. To resolve the problem, immediately after installing *Windows Me* install the program file **PCI.vxd** to update your system driver.

For more information on this, refer to the Microsoft article "Computer with PCMCIA Modem Hangs During Suspend Mode" (Q270086) which can be found on Microsoft's web site.

Other Keyboards

If your keyboard is damaged or you just want to make a change, you can use any standard PS/2 or USB keyboard. The system will detect and enable it automatically. However special functions/hot keys unique to the system's regular keyboard may not work.

Keyboard and Mouse

Unwelcome numbers appear when typing.

possible cause: The Number Lock is turned **ON**.

indicator: The LED is lit.

solution: Press and release the **Fn** & **Num Lk** key combination.

I have installed a new external keyboard or mouse but cannot use all of the listed functions.

possible cause: You have not installed the driver to enable any extra functions.

solution: Make sure you read the documentation which comes with any new external device, and make sure you install the driver for it as this will allow you to access any extra functions which come with your device.

Printer

The printer cannot be added to the system or will not work.

possible cause: The printer power is off or the printer is not correctly connected to the computer.

solution: Check all connections and cables and then try to reinstall the driver.

possible cause: The printer is not turned on, or has an internal problem.

solution: Make sure the printer is on. You may refer to the printer's manual for instructions on printing a "self-test" page (a "self-test" page will print regardless of computer connections and is a means of insuring that the printer is actually working).

possible cause:	There is no paper in the printer, or the paper is incorrect for the settings designated in your software.
solution:	Put more paper in the printer (also fan the paper to make sure it doesn't stick together and cause a paper jam) and check the paper size matches your software's "print" settings.
possible cause:	The printer **driver** is not installed or is configured incorrectly.
solution:	Check that the printer is properly installed and configured (correct port etc.). Also check that you have installed the latest driver compatible with your *OS* (updated drivers are usually available for download from the printer manufacturer's website).
possible cause:	The printer is a network printer and it is not properly connected to the network.
solution:	All networks are configured differently so please check with your **network administrator** to get the correct setup.

possible cause: The **operation mode** for the **parallel por**t set in the *BIOS* doesn't correspond with the mode your printer can work with.

solution: The default operation mode for the parallel port (**ECP**) is backward compatible with other operation modes used by older printers and will usually not need to be changed. However some very old printers may require specific settings. Please check your printer manual to find out which mode your printer uses. Check that the settings in the *BIOS* (see ***"I/O Device Configuration (Advanced Menu)" on page 5 - 12***) correspond with those indicated in your printer manual.

Win98SE Installation Warning

Win98SE installation usually requires you to start your system from a floppy disk, then browse to the CD to run setup.exe program. After the system has started up from the floppy disk, please **disconnect the USB floppy drive** before browsing to the CD drive to install the Win98 software. This will avoid a "system hang".

Operation

The system freezes.

possible cause: The system's power saving features have timed-out.

indicator: The screen goes dark.

solution: Use the AC adapter, press the **Fn + F4** (**suspend/resume**) key combination, or press the power button if no LEDs are lit.

possible cause: A software conflict made the system "crash".

solution: Consult your *OS* manual. As a last resort, since you will lose any unsaved data, try to reboot the system or if that doesn't work, turn the computer off and on again.

The system never goes into hibernate mode.

possible cause: *Power Options* features are not enabled.

solution: Go to the *Power Options* control panel and enable the features you prefer (see ***"Enabling Power Options" on page 3 - 18***).

The system does not go into Standby or Hibernate mode when the battery is low.

possible cause: The *Power Options* are not configured.

solution: Use one of the *Power Options* presets.

The Infrared device doesn't work.

possible cause: The **Infrared** transceiver is blocked.

solution: Make sure nothing is between your system's **Infrared** transceiver and the destination's transceiver.

Note: The **Infrared** transceiver operates on a "Line of Sight".

possible cause: Support for **IrDA/AskIR/FIR** types infrared devices is disabled.

solution: The default infrared mode (**FIR**) is backward compatible in supporting **IrDA/AskIR** devices. This will usually not need to be changed, however some devices may require specific settings. Changes may be made in the *BIOS Setup* in the **Advanced** menu (see ***"I/O Device Configuration (Advanced Menu)" on page 5 - 12***).

Appendix A. Specifications

Refer to *"Model Types" on page 1 - 7* in order to identify if your computer is model **A** or **B**.

Processor (Model A)

- Intel Pentium 4 Processor - (478-pin) FC-PGA2 package

  (µ0.18) 0.18 Micron Process Technology, 256K L2 Cache & 400MHz FSB - 1.5/1.6/1.7/1.8 GHz

  (µ0.13) 0.13 Micron Process Technology, 512K L2 Cache & 400MHz FSB - 2.0/ 2.2/ 2.4 GHz

Processor (Model B)

- Intel Pentium 4 Processor - (478-pin) FC-PGA2 package

  (µ0.13) 0.13 Micron Process Technology, 512K L2 Cache & 400MHz FSB - 2.0/ 2.2/ 2.4 GHz

Core Logic

- SIS650

Structure

- Fully PC99 Compliant
- ACPI 1.0B Compliant
- PC2001 Compliant

Security

- Kensington® Lock

Memory

- Two 200-pin DDR SODIMM sockets, supporting DDR SDRAM SODIMM (2.5V) - DDR266 compliant
- Expandable memory up to 1GB (128/256/512MB SODIMM Modules)

BIOS

- One 512KB Flash ROM
- Phoenix BIOS

LCD

- 14.1" XGA TFT (1024*768)
  OR
- 15.0" XGA TFT (1024*768)
  OR
- 15.0" SXGA+ TFT (1400*1050)

Display

- 4 * AGP™
- Integrated 128-bit 2D/3D graphics engine
  Advanced HW accelerator for DVD content playback
  Motion compensation and IDCT accelerator
- Dual-View display monitor
- Integrates a NTSC/PAL video encoder with Macro version option for TV display

Video Memory Note: The system allocates or "shares" a portion of system memory for video use. "Shared" memory is user-configurable via the SCU. The default setting is set to **32MB**, and in addition, may be adjusted to **16MB** or **64MB** (see ***"Embedded Share Memory (Advanced Menu>Advanced Chipset Control)" on page 5 - 11***).

Storage

- One changeable 2.5" 9.5mm HDD supporting Master mode IDE & PIO mode 4/ATA-33/66/100 (Ultra DMA)
- Optional 12.7mm (h) 24 * CD-ROM drive, OR 8 * DVD-ROM drive, OR CD-RW drive, OR combo drive (8 * DVD-ROM + CD-RW)

Audio

- AC'97 compliant interface
- 3D stereo enhanced sound system
- Compatible with Sound-Blaster PRO™ 16
- S/PDIF Digital output (5.1 CH) for DVD content and stereo audio
- Microphone-in jack
- Headphone-out jack
- Built-in microphone
- 2 built-in speakers

Keyboard

- “Win Key” keyboard

PC Card (Model A Only)

- One type II PCMCIA 3.3V/5V/12V sockets (no Zoomed Video support)
- Supports one CardBus slot

Interface

- Built-in TouchPad (scrolling key functionality integrated)
- Three USB ports
- One IEEE 1394 port (**Model A Only**)
- One S-Video jack for TV output
- One parallel port (LPT1), supporting ECP / EPP 1.7 and 1.9
- Infrared transceiver IrDA 1.1 FIR/SIR/ASKIR (**Model A Only**)
- One external CRT monitor port
- One external keyboard/mouse (through Y cable) PS/2 port
- One speaker-out/headphone-out jack
- One microphone-in jack
- One RJ-11 jack for modem
- One RJ-45 jack for 100M/10M LAN
- One S/PDIF out port
- One DC-in jack
- Three built-in instant keys for web browser, email & DVD/CD player

Communication

- Wireless Infrared transfer IrDA 1.1, up to 1M operating distance, 115.2K bps SIR/ 4Mbps FIR (**Model A Only**)
- 10/100Mb Ethernet LAN built-in
- 56K MDC modem V.90 & V.92 compliant

Power Management

- Supports ACPI v1.0B
- Supports suspend to RAM
- Supports suspend to disk
- Battery low suspend
- Resume from modem ring (S3)
- Resume from LAN (S3)

Power (Model A)

- Full range AC adapter - AC-In 100~240V, 50~60Hz, DC Output 20V, 6A
- Supports one removable Smart Li-Ion battery 11.1v/ 6.0Ah, 6000mAH

Power (Model B)

- Full range AC adapter - AC-In 100~240V, 50~60Hz, DC Output 20V, 4.5A (90w)
- Supports one removable Smart Li-Ion battery 11.1v/ 6.0Ah, 6000mAH

Indicators

- LED indicators (HDD, Power On/ AC-In/ Suspend, Battery Charging/ Battery Full, E-mail, Num Lock, Caps Lock, Scroll Lock)

Environmental Spec

- Temperature
- Operating: 5°C~ 35°C
- Non-Operating: -20°C ~ 60°C

Relative Humidity
Operating: 20% ~ 80%
Non-Operating: 10% ~ 90%

Physical Dimensions

- 331 (w) x 280 (d) x 44.5 (h) mm

Weight

- 3.2 kg w/o battery

Optional

- DVD-ROM Drive (12.7mmH)
- CD-RW Drive (12.7mmH)
- Combination Drive (DVD-ROM and CD-RW, 12.7mmH)
- USB FDD
- Software DVD player
- Software RW writer
- Lithium-Ion smart battery pack (9 cell)